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PART I.

ORIGINAL COMMUNICATIONS.

ART. V.—*An Essay upon the Malformations and Congenital Diseases of the Organs of Sight.* By W. R. WILDE, M.R.I.A., F. R. C. S., Surgeon to St. Mark's Ophthalmic Hospital, Honorary Member of the Medical Society of Stockholm, &c. &c. With Illustrations. Part III. Continued.

IN the Number for March, 1845, of the former series of this Journal, I commenced the subject of the present inquiry. In it I noticed the various malformations and congenital diseases of the lachrymal appendages, and also of the globe of the eye, at least so far as size and form were concerned. In the Number for September in the same year I again resumed the subject, and continued the inquiry to that section of it in which the alterations in the structure, size, and shape of the cornea were discussed(*a*). We now approach the most inte-

(*a*) Since the publication of the two former Numbers of this essay, some additional information has been elicited on the subject of the malformations

resting portion of the inquiry,—the congenital peculiarities and diseases of the iris and of the choroid; these, on account of their intimate anatomical relations, and the mode of their early development, I shall consider under the same head in the present Number; and conclude the subject in a subsequent paper with an inquiry into the malformations of the dioptric media and sensitive apparatus, the lens, vitreous humour, retina, and optic nerve, together with the consideration of monoculi, both in man and some of the lower animals(*a*).

A brief review of the most generally received opinions and most faithful observations, as regards the formative process in these parts, will considerably assist our subsequent investigations, by explaining, in many instances, how those arrests of development occur which present such marked peculiarities in after life(*b*). This subject is not one of mere speculative interest or unpractical importance, but is well deserving the attention not only of the special ophthalmic practitioner, but the general surgeon also; for, without some knowledge of it, any one who undertakes the treatment of diseases of the eye may find himself led into serious errors in diagnosis.

In the fœtal eye the choroid is developed long antecedent to the iris. This membrane, supposed by Le Cat and Arnold to be the analogue of the pia mater, is said to be apparent so early as the end of the first month, but Valentin could not find any trace of it till the eighth week. The researches of this very

of those structures which have already been discussed. This I have embodied, together with some additional cases, which occurred in my own practice, in the Ophthalmic Reports for 1846 and 1847, which appeared in the fifth and tenth Numbers of the present series of this periodical.

(*a*) The malformations of the visual organs in the lower animals shall only be considered so far as they in any way explain or illustrate these peculiarities in the human species.

(*b*) In this and the foregoing essays, I have, in the descriptions of the anatomical developments, referred chiefly to the seventh volume of the *Encyclopédie Anatomique*, Paris, 1843, in which the opinions of the most celebrated German observers are set forth, and where the various authorities and works quoted are specified and set out in full.

accurate observer enabled him at this period to detect two vascular laminæ, enclosing between them a pigmentous layer, and a layer of the proper substance of the choroid (*une couche de substance*), four in all, and developed in the following order: the substantial layer first, then the two vascular envelopes, and finally the pigment. On a microscopical examination, this pigment is found to consist at first of clear globules, which, by compression, subsequently assume the form of hexagonal or pentagonal cellules. In these the dark or pigmentary matter is developed, at first at the periphery, but subsequently it penetrates the entire cellule. The choroid commences to be formed at its anterior or corneal margin, a circumstance which has given rise to so many errors with regard to the development of the iris.

In vertebrate animals embryologists have discovered a thin, colourless line in the choroid, running from within outwards, and ending at the anterior and inferior angle of the eye; this is considered to be a rent (*feute*) of the choroid, and in very early life it is believed to extend to both sclerotic, retina, and vitreous humour; and in the former of these membranes (the choroid) a trace of it can be subsequently recognised by the thinness and tenuity of the structure, as well as the absence of pigment along its course. In some rare instances, this obliterating or fusing process is arrested, and then this curious condition presents at birth, under the form of *coloboma choroideæ*. To account for its appearance many ingenious theories have been put forward, and many vague hypotheses broached. Walther and others have attributed it to the union of the double primary element at this point; if so, however, the line or cicatrix should be mesial and vertical. Huschke considers it a trace of the original separation of the germ into two parts, as explained at page 27 of the first portion of this essay; while Baer denies the existence of the fissure *in toto;* yet he acknowledged that in birds there is in this situation a fold of retina in very early embryonic life, into which the choroid,

devoid of pigment, subsequently insinuates itself, to form the pecten or marsupium, with which every anatomist is acquainted. In some of the cartilaginous fishes (the sturgeon, for instance) I have detected more than one fold of the choroid.

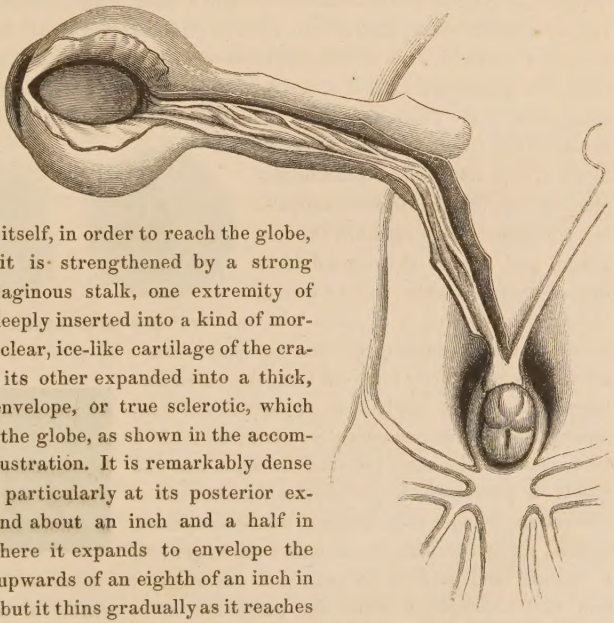
In this fish there is a very remarkable thick, cartilaginous sclerotic, of an irregular shape, particularly upon the internal surface, as is well shown in the drawings to the accompanying notes, which I had made from the eyes of the sturgeon of the Danube, many years ago, in Vienna(*a*); and the choroid is tucked into each of those angles. Baer asserts that the fissure of the choroid which remains permanent in some animals is to be found at a certain period of the embryonic state in man. The ciliary ligament has been found by Valentin so early as

(*a*) It was my original intention to have written an anatomical paper upon the peculiarities of the visual apparatus in this class of fishes; but as matters of more practical importance have intervened since I made the original di^{s}sections in 1841, to prevent my again investigating the subject, I think it advisable briefly to mention the result of my inquiries in this place, in order that others more conversant with such matters may take it up; this notice being intended more to elicit investigation than to satisfy inquiry. In a sturgeon (*Sturio accipenser*) of small size it is very difficult to make the necessary examinations, and in one of large proportions the amount of labour required to exhibit the parts in their natural position is, owing to the intense hardness and thickness of the upper section of the head, parts of which can only be cut away with the chisel, very tedious and difficult indeed. Having, however, displayed the parts *in situ*, we observe the following appearance:— the brain remarkably small; the optic globes rather large in proportion; no decussation of the optic nerves, which at once proceed in a forward direction, and at an acute angle to each other; immediately upon leaving the cerebral chamber they traverse in an outward direction a canal in the hard semi-transparent cartilage for about an inch and a half in length; this canal widens towards its external aperture, it is lined by a thick fibrous membrane, and partially, towards its external aperture, by a prolongation of the choroid, or a pigmentous membrane analogous thereto. This fibrous sheath of the canal, which would appear to be analogous to the ordinary neurilema of the optic nerve in other animals, is continued on to where the nerve pierces the cartilaginous sclerotic, which, in a large specimen of the Sturio accipenser, is upwards of three inches in length. Immediately upon the nerve leaving the cranial cavity it begins to break down into a thin membraneous

the middle of the third month; and the formation of the ciliary body commences, according to Arnold, during the fifth week, by a number of small folds (the ciliary processes), at the anterior border of the choroid, where it encircles the margin of the crystalline. Von Ammon, however, has not been able to detect the ciliary processes till the fourth month.

Some slight difference of opinion exists among embryologists as to the precise periods at which the iris can first be seen; Arnold having stated that he could observe it in the seventh week, while Valentin, to whose opinions great deference should be paid, was unable to perceive it till the end of the third or the beginning of the fourth month. All, however, agree that it is formed subsequently to the choroid. It at first

expansion, which enlarges into a flat, tape-like body, folded upon itself, as shown in the accompanying wood-cut. Having advanced to the edge of the cartilaginous plate of the skull, this optic tube turns at an acute angle with itself, in order to reach the globe, and here it is strengthened by a strong fibro-cartilaginous stalk, one extremity of which is deeply inserted into a kind of mortice in the clear, ice-like cartilage of the cranium, and its other expanded into a thick, fibrinous envelope, or true sclerotic, which surrounds the globe, as shown in the accompanying illustration. It is remarkably dense and thick, particularly at its posterior extremity, and about an inch and a half in length; where it expands to envelope the globe it is upwards of an eighth of an inch in thickness, but it thins gradually as it reaches the cornea; it differs from the well-known cartilaginous stalk which attaches the globe to the cranium in some of the osseous fishes by thus surrounding



appears in the form of a narrow transparent ring, which gradually extends inwards from the anterior margin of the choroid, in which the pigment is afterwards deposited on its posterior surface. According to some anatomists it consists of a membraniform expansion of the long ciliary arteries, as the choroid is supposed to be developed from the reticulation of the posterior ciliary vessels. At first the iris is a complete ring without any slit or aperture in it. A contrary opinion, however, was held by many of the most distinguished anatomists, from Malpighi and Haller down to the days of J. Müller; but Bishoff considers that their error arose from observations made upon the anterior border of the choroid (where a natural division

and forming a sheath for the expansion of the optic nerve, which latter, as I have already shown, appears to be resolved into a substance resembling retina in many respects, immediately after leaving the cerebral cavity. Within the external fibrous sclerotic we find a thick, dense, cartilaginous envelope, scarcely susceptible of alteration in its form by pressure between the fingers, a posterior view of which is represented by figure 1, and an anterior view of a transverse section of which is shown by figure 2 in the accompanying wood-cut. The optic nerve, having pierced this cartilaginous body by means of the ovoid aperture shown in figure 2, does not expand into a hemispherical cup, like that in other animals, but traverses a deep sulcus in the cartilage, and pierces the choroid by a line or fissure of about half an inch in extent, from which it expands into the ordinary cup-shaped retina, as shown in the accompanying drawing made from a specimen in which the nerve was completely removed from the surrounding parts. I have not had an opportunity of examining the nerve microscopically; but I may remark that, while in the canal between the brain and the globe, it possesses all the physical characters of the retina, being a thin, greyish, semi-transparent lamina, easily breaking down under the fingers or a forceps, and only to be examined effectually by manipulating with a fine camel-hair pencil while the parts are under water, or by hardening the nervous substance by the addition of a little alcohol or alumn. In the first specimen that I examined I was under the impression that this

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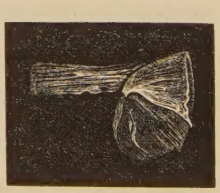


may be seen in very early life), and not on the actual iris. A vice of conformation, however (coloboma iridis), occasionally takes place, to which we shall presently refer, in which a slit in the iris is found at birth, which rather lent support to the observations of the early anatomists, and to explain which the ingenious hypothesis of Walter—of the eye being formed from the fusion of two lateral and symmetrical portions—was invented. The capsulo-pupillary sac, and the membrana pupillaris, discovered by Wachendorff and Haller, being united by their vessels, must be considered together as one membrano-vascular expansion; the former passing from the surface of the crystalline capsule, traverses the superficies of the posterior

portion of the nerve was tubular, but I have not been able by subsequent observations to satisfy myself upon that point. Where it passes through the fissure in the choroid it is remarkably thin and attenuated, as if constricted or deprived of one or other of its coats at this point; but having fairly entered the eye it becomes more consistent. The choroid is dark brown towards the cartilaginous sclerotic, through which it receives several fine vessels, the trajets of which are seen in the views already given of that structure. The inner surface of the choroid is of a beautiful silvery grey, and, as already stated, this membrane enters deeply into the sinuosities of the surrounding cartilages, where it is intimately united to it by means of those vessels. Posteriorly the external layer of the choroid sends a prolongation into the optic canal, where its black pigment is easily recognised. The lens is globular, but rather larger in proportion to the size of the organ than in most other fishes; the iris presents the tapetum-like appearance of the choroid; the pupil is slightly oval; the cornea flat. A horizontal section of the eye, from the cornea to the optic nerve, gives very much the appearance seen in the eyes of cetaceæ,—the external coats being much thickened posteriorly, and the cavity in the interior bearing no proportion to the size of the globe externally. In a volume of Rheil's Archives (I think for 1825), some notice is taken of this internal cartilaginous sclerotic, but, with this exception, I am not aware of the subject having been investigated by any anatomist; and this was the opinion of Professor Müller of Berlin, to whom I showed the drawings and preparations in 1841. Without a series of expensive, highly-coloured illustrations it would not be possible faithfully to represent the anatomical peculiarities in the eyes of the sturgeon. The foregoing observations, with the accompanying wood-cuts, may, however, serve to draw the attention of future observers to this interesting subject.

chamber to the edge of the pupil, where the anterior layer of the serous membrane of Descemet, uniting with the fine ramification of these vessels derived from the long ciliary arteries already described, and passing across the pupil, forms the membrana pupillaris. Generally speaking, this membrane and its vessels disappear shortly before birth, but sometimes it remains permanent for a length of time, constituting a congenital disease which occasionally engages the attention of the surgeon. Embryologists have not discovered any trace of pigment in the eye of the human embryo up to the fourth or fifth week, as already stated; and in the fourth or beginning of the fifth month the iris is said to be invariably found of an uniform blue colour, perfectly smooth upon its surface, and without any of the network which gives that peculiar marking to the front of the iris with which we are all familiar, and which, in all probability, subsequently becomes muscular.

MALFORMATIONS OF THE IRIS AND CHOROID.

The congenital defects and peculiarities of the iris may be classified into three great divisions:—irregularity of colour; deficiency of parenchymatous structure; and abnormal conditions in the size, shape, and position, of the pupil.

Under the first head might be considered, did our space permit, those national peculiarities which distinguish the various races of mankind. This, however, is too wide a field for any minute investigation here; the subject is well set forth in various works upon the physical history of man, and is also touched upon in most modern books of travel.

Varieties of Colour.—*Albinos* are frequently found, and indeed were first remarked and described by the Portuguese, among the dark Negro races. We have, however, but few opportunities of examining such curiosities in this country. Furnari, in his Medical Voyage in Africa, informs us that albinism or *Leucosis* is very frequent among the Jews of the northern part of that continent; and that, besides the ordinary appear-

ances which albinos usually present, there is in these persons the remarkable peculiarity superadded, of the ciliæ, as well as the skin of the eye-lids, being covered with minute reddish spots. He also states that glaucoma is a very frequent affection among this race; and some pathologists are of opinion that in this disease there is a deficiency of colouring matter in the eye. It has been asserted that dampness and unwholesome air or food assist to induce this disease, and in proof of this assertion it is stated that the Isthmus of Darien, one of the dampest countries in the world, possesses the greatest number of albinos. There can be little doubt but this peculiarity is hereditary; at the same time it is frequently seen among several brothers and sisters of the same family, whose parents or forefathers never exhibited any symptoms of the defect. The general appearance of albinos is too well known to require any minute description(*a*). They are generally below the middle size; the skin all over the body is remarkably fair and fine in texture; the hair of the head is long, of a fine silky texture, and rather inclined to curl, and that upon the brow is generally thick-set and often bushy; the skin of the eye-lids is particularly delicate; the upper lid usually droops somewhat; and the palpebræ are, from the intolerance of light, generally contracted, like those of a person labouring under photophobia. The ciliæ are, like the rest of the hair, long, fine, and silky, and usually more curved than in those persons in whom colouring matter is developed. The globes are in constant oscillatory motion (nystagmus), such as has been already described in the former part of this essay, and

(*a*) The general description of the albino will be found at length in all the cyclopædias. See in particular the articles under this head in the Encyclopædia Britannica, Encyclopædia Metropolitana, Dr. Bostock's article in Todd's Cyclopædia of Anatomy and Physiology, and Dr. Prichard's notices of leucosis and the xanthous varieties of the human race, in his Physical History of Man; see also Herr Sach's work on the subject: both this author and his sister were Albinos. See also Söemmerring's and Seiler's great works already referred to.

there is often slight strabismus ; the conjunctiva is pale, except towards the caruncle, where it contains some fine pinkish-red vessels; the sclerotic is generally somewhat thinner than natural; the cornea presents no well-marked peculiarities that I am aware of; but the iris and choroid are of a brilliant pink colour, owing to the total absence of all pigmentous matter permitting the vascular arrangement of these membranes to be seen and thus present this peculiarity(*a*). Several of the writers who have described the eyes of human albinos mention irregularities in the position and form of the pupil; but these I believe to be accidental or exceptional peculiarities, not the ordinary condition in such cases. The iris is peculiarly brilliant, and in all instances which I have examined, it differs in colour from the deep pink hue of the pupil by having a slight trace of white and blue colour mixed through it, the former being caused by well-marked development of the internal circle and the radiating fibres which appear upon its surface. I lately dilated the pupils of an albino, and observed that as the irides expanded their bluish hue increased in intensity, and contrasted the more forcibly with the brilliant pink tint seen through the enlarged pupil. The pupils, which are remarkably sensitive, are, it is said, usually drawn upwards, and in some instances a minute line of dark-coloured pigment may be observed on the margin of the extreme edge of the iris : this peculiarity I have only observed in horses. Buzzi, who has written an interesting anatomical memoir on the albino eye, has found the iris white in the dead subject, without any trace whatever of uvea; the choroid fine in texture and light red; the retina normal, but whiter and finer than usual; the macula lutea close to the origin of the retina, and somewhat higher in colour than natural: this latter pecu-

(*a*) Blumenbach, in October, 1784, first advanced this theory, and before the end of that year Signor Buzzi verified it by actual dissection. Mr. T. W. Jones has shown that the membrane of the pigment or choroidal epithelium is present in albinos, though devoid of colouring matter.

liarity, however, has not been confirmed by the observations of others(*a*).

From the absolute albino, where there is a total deficiency of colouring matter, to the normal state of the dark-eyed races, we find numerous varieties of imperfect and incomplete leucosis, presenting more or less the general characteristics in the hair, intolerance of light, trembling condition of the globe, &c., &c. In the xanthian variety the iris is of a lilac tinge, and the hair presents a greenish hue; whereas in some forms of leucosis a violet or purplish tint of the eyes predominates, from the admixture of the blue and rose-red colours.

All such persons, as well as true albinos, are weak-sighted, and what is generally styled purblind, seeing best in a modified light, or in the dusk. Although I have seen the hairs on the brow and the eye-lashes perfectly white on one side and dark on the other, I have never heard of an instance in which one eye was affected with leucosis and the other not. In a case related by Seiler the eye-lashes were white, the irides of a bluish red, but the hair on the brows and over the head generally was dark. Partial leucosis has, however, been observed in animals in a wild as well as those in a domestic state, particularly those denominated piebald; but I feel assured that, in many instances, these spots upon the iris are not colourless, but arise from a peculiar *white* deposit, similar to that which is denominated a "wall-eye," so frequently seen in mottled dogs and cream-coloured horses.

In the human embryo observers have not found any pigmentous deposit until the fourth or fifth week, so that it is probable that an arrest of development has been the cause of this peculiarity. Cases of leucosis are recorded in which it would appear that some colouring matter was deposited after birth. Dr. Graves has related a very remarkable instance of this,

(*a*) A question here suggests itself, whether the yellow colour seen round the foramen of Söemmerring, and which is supposed to be a ganglionic appearance, is really a pigment.

in which, in a born albino, the "eyes had changed from violet-red to grey, and his hair from white to light-brown, and that the susceptibility of the eyes to the light had greatly diminished"(*a*). I do not believe, however, that any of the cases in which the eyes darkened in after life, presented at birth the highest degree of complete leucosis. I have myself had an opportunity of examining a case of this description in the person of Master D——, aged about three years, when I first saw him, in 1843, along with Dr. Brereton. His irides at that time were a light lilac blue, and his pupils a violet-red colour; there was partial oscillation of the globes, which were somewhat enlarged, and the corneæ were more prominent than natural: the hair of the head, as well as that upon the brows and eye-lids, was then of a dirty cream colour. His parents and attendants stated that he was born an albino, the hair being then much whiter, and the eyes of a bright pink. I have frequently seen this child since; both eyes and hair have become considerably darker, so that at present the latter are what would be termed light blue. The boy is, however, very weakly, and the vision (apparently owing to some enlargement of the globes) has not improved with the development of colouring matter. Sybel relates a case in which the outer ring of both irides was, at its upper part, of a rose-red colour till the eighth day after birth when it became a dark brown. Meyer and Aschersohn have observed similar instances where colouring matter appears to have been developed after birth: the first in a child born with violet-coloured eyes, which at the end of the third year were changed to blue, and the white hair to light brown; the second where a very light blue-grey iris, with red pupil, altered at the end of the seventh year to a cherry brown. Fermin relates cases in which a peculiar light appears to have been emitted in the dark from the eyes of albinos(*b*).

It still remains questionable whether treatment can in any

(*a*) See Prichard's Natural History of Man, second edition, 1845, p. 79.
(*b*) *Description de Surinam.* Paris, 1769.

way promote the deposit of colouring matter, the deficiency of which is the cause of leucosis.

The natural colours of the iris are different shades of brown and hazel, yellowish, light and dark blue, and blue grey. The term true black can scarcely be applied to any condition of the iris, although I have seen instances, even in Europeans, in which it was not possible, without a very close examination, to discover any difference between the colour of the pupil and iris. According to some observations made by M. Petrequin upon the inhabitants of France and the adjoining countries, it appears that the grey eyes predominate among males and the brown among females, and that in both, the light-coloured eyes predominate over the dark considerably. With the intention of drawing up some statistical tables with respect to the diseases which prevail among individuals with different coloured irides, I have had the colour of the eyes noted in my hospital registry for the last eighteen months, and find the result to be as follows:

Of 2776 individuals, 1884 had light eyes, consisting of 752 blue, and 1132 grey, in the proportions of 992 males to 892 females; 288 hazel, and 604 dark eyes, varying in shade from light brown to what is denominated black; the proportion of males to females in this latter class (amounting altogether to 892), being 470 males to 422 females. From this series of observations it follows, that, in the Irish population in and about Dublin, the proportion of light to dark eyes is nearly three to one, speaking in round numbers.

There are, however, particular localities in Ireland in which dark eyes predominate, as in certain parts of Galway, Kerry, and Londonderry, but not to any great extent. In these places I have observed that the females possessed the dark eye in the greatest numbers. The true orange-brown eye, found in connexion with auburn hair, is very rare in Ireland; but a yellow-orange, with wiry reddish-chesnut hair and densely freckled skin, is by no means uncommon here. The very light blue eye, with dark hair, brows, and eye-lashes, still obtains in many parts west of the Shannon.

The most frequent peculiarity of the iris consists in partial varieties of colour, denominated by the ancients *Heterophthalmus*, of which we have frequent examples among the light-eyed Celtic inhabitants of these countries. One of the most remarkable examples of these irregularities of colour consists in one iris being light blue or grey, and the other dark brown, of which I have seen several instances. Another example of this peculiarity consists in a portion of the iris, frequently the lower or outer half, being brown or hazel, the remainder blue or grey, and the iris upon the opposite side being also light-coloured. Spots and patches of a dark colour, varying from the deepest shade of brown to that of light cinnamon colour, and even to a yellowish hue, are frequently observed in light eyes; and it behoves the practitioner to be well acquainted with these circumstances, as such blemishes might possibly be mistaken for the result of disease; and in cases in which a surgeon is called upon for the first time to visit a patient labouring under ophthalmia, in whom such peculiarities exist, it is possible that a serious error might be committed. I have never seen congenital maculæ or discoloration of the iris in very dark eyes, and I have never known these defects to influence vision one way or the other.

One of the most remarkable instances of mottled irides which has yet been recorded is that related by Professor Osborne, in the seventh volume of the former series of this Journal, page 33, and which also proves that these peculiarities are sometimes hereditary. In this case the irides were of a "dusky, light yellowish ground, and a number of dark, reddish brown spots were sprinkled on them in an irregular manner, but in greatest number towards the internal angle of each eye. The spots on the back of a tortoise-shell cat afford the best resemblance." The person who was the subject of this peculiarity had fifteen brothers and five sisters, who all possessed the same peculiarity, which was derived from his mother, whose three sisters and one brother had the same, which was in her again derived from the mother's side. This peculiarity, which was

well known and recognised in that part of the country (county Waterford) from which this patient came, had always been believed to be transmissible by intermarriage or descent.

Sometimes the adventitious colour occupies the whole breadth of the iris; in other cases it appears in isolated patches. I lately published an account of a very peculiar and until then undescribed form of discoloration. In this case,

"On examining the eyes at about two feet distance, the edge of each pupil appeared remarkably ragged and irregular, so as to look like a case of synechia posterior, the result of iritis, in which the attachment of the iris to the lens had been put upon the stretch by the action of belladonna. Upon a closer view the appearance turned out, however, to be the result of an irregular circle of remarkably black pigment (darker even than that which is usually found upon the uvea) which occupied the inner fifth of the circle of the iris, and was apparently raised above the surface of that membrane. It was with some difficulty that the pupillary margin (which was perfectly normal) could be distinguished at the distance of even twelve inches. The outer edge of this deposit, though most irregular, was very sharply defined. Either the pigmentary membrane turned round the pupillary margin and spread over the anterior surface of the iris, or the parenchymatous structure of the iris was congenitally deficient at this point, and allowed the uvea to be seen anteriorly. The circles and radiating lines were not well marked in this person's irides"(*a*).

It is unnecessary to adduce more instances of varieties of colour in the iris, the result of congenital defect. The lower animals, dogs in particular, frequently present these peculiarities.

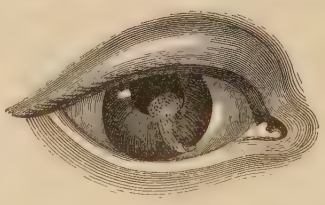
The development or deficiency of the peculiar striæ, loops, and rings upon the surface of the iris gives rise to certain well-

(*a*) See the Author's Report on the Progress of Ophthalmic Surgery for the Year 1846, in Dublin Quarterly Journal for February, 1847.

known appearances, which it is unnecessary to detail. Some years ago a child was exhibited on whose irides it is said the words "Napoleon Empereur" were written. This phenomenon, which attracted much attention at the time, appears to have been produced by an unusual arrangement of those loops, bands, and striæ,—similar to the fleshy pillars and tendinous cords of the heart,—which mark the surface of the ocular diaphragm, and which a stretch of the imagination amplified into the letters forming the name of the Emperor(*a*).

Between the varieties of colour and the deficiencies in the structure of the iris may be placed the defect denominated *Korestenoma*, in which there is not only a difference in colour, but also an unnatural projection of the substance of the iris within the circle of the pupil in any one part. This congenital peculiarity, which is one of the very rarest forms of malformation, is faithfully represented by the accompanying wood-cut, copied from Dr. Szokalski's paper on the subject, which I lately re-published from the Prague Medical Journal.

"The subject of this malformation was a girl of scrofulous constitution, born with hare-lip, and said to be affected with syphilis. The irides were light blue, and in each iris was observed a light yellow stroke of a conical shape; it arose broad from the border of the pupil, and extended obliquely downwards and inwards to the ciliary margin. In the right eye, however, its upper edge formed a rounded, wart-like protuberance, which projected into the pupil, and occupied about half the size of that aperture in its moderately dilated state, and also extended



(*a*) I possess a very good lithograph of "Josephine Louis, the French child born with the words "Napoleon Empereur' in its eyes." Upon the lower section of the right iris the marks resemble the capital letters in the word "Empereur," and the word "Napoleon" occupies somewhat the same position on the left iris.

into the anterior chamber. It was said to be covered with minute hairs. The other parts of the eye were normal. While the ordinary discoloration of the iris, which this resembles, has been accounted for on the belief that it is an early cicatrix of this membrane, no plausible hypothesis has yet been advanced which will explain this peculiar fault in the formation of the ocular diaphragm. A case similar to this is reported to have occurred in the practice of the venerable Walther of Munich"(*a*).

Although the Russian physician has, and perhaps correctly, placed this peculiarity under the head of *Korestenoma*, yet it differs in many respects from the affection to which Ammon first applied this name, and which he has described and figured in his *Klinische Darstellung*, as a thick, adventitious, and abnormal substance, probably a growth from the persisting pupillary membrane, filling up the pupil, except a small aperture in the centre. Borthwick mentions a case of this description in the Edinburgh Medical and Physical Commentaries, vol. i.

The fact of the case related by Dr. Szokalski having been mistaken and treated for syphilitic iritis, with lymph effused on the surface and border of the iris, is in itself a sufficient proof of the necessity of the profession being made acquainted with all these vices of conformation.

Malformation of the Pupil.—The varieties in the position, form, and size of the pupil, next engage our attention. The two most remarkable of these are the over-contraction and the over-dilatation, compared either with the average magnitude of this aperture in the human eye generally, or with the eye upon the opposite side in the same person, supposing it to be normal. To the former, or the state of contraction, is applied the term *Myosis* or *Microcoria*, and to the latter or preternatural dilatation, *Mydriasis*. Both these con-

(*a*) *Vierteljahrschrift für die praktische Heilkunde* III., *Jahrgang*, 1846. *Vierter Band.* Prag. See Dublin Quarterly Journal for May, 1848, p. 472.

ditions, however, are occasionally induced by disease, and certain poisons, such as opium, belladonna, &c.; and the former sometimes exists quite independent of any mechanical hinderance, such as attachment to the capsule of the lens, &c. It would, however, be out of place in this essay to enter upon either the accidental varieties or the causes which induce these affections in after life. The accompanying drawing very faithfully represents one of the most remarkable instances of *Congenital Myosis*, joined with *Corectopia*, or displacement

of the pupil, and other peculiarities both in the colour and structure of the iris, that I have yet met or read of. In this case the iris is of a greyish slate colour, with a number of whitish lines radiating from the pupil upon all sides, and there is a total deficiency of those looped or transverse bands which assist to form the ordinary circles of the membrane, which is also slightly oscillatory. The pupils, which are placed in the junction between the upper and middle thirds of the iris, are not more than the size of large pins' heads, but susceptible of dilatation by modification of light,—that upon the right side ovoid, that on the left somewhat quadrangular; at first view, however, the edges of both appear to be irregular and fringed, but this, by careful examination with a lens, we find to arise from the turning over of the pigment round the pupillary edge, as in the case described at page 265. There is a very broad, well-marked corneal ring, resembling the arcus senilis; but in this case it was congenital. The eyes are almost exactly alike upon both sides. The subject of this peculiarity never suffered from disease of the eyes of any description, and none of his

family have been similarly affected. Although at present rather near-sighted, he has been able to shoot snipe, and to follow his profession, that of an officer, without any inconvenience(*a*).

Sometimes but one eye is affected with eccentric pupil. To the irregular or abnormal position of the pupil the terms *Corectopia* and *Parastrophe* are applied. Here is an example which serves also to illustrate the displacement as well as the preternatural contraction of the pupil, which is here situated in the upper and outer side of the iris in the right eye. The subject of this defect, who is a labouring man, has also very weak and uncertain sight with both eyes, but particularly the right.

When I first saw this person he was under treatment for what was believed to be syphilitic iritis, with irregular pupil. In his case we have another instance of the necessity of being acquainted with these malformations. I lately extracted a cataract from an old lady in whom congenital myosis presented considerable opposition to the exit of the lens.

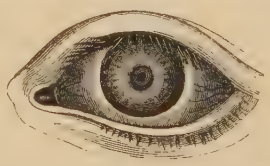
During the past year I operated upon a case of acquired cataract in a young gentleman from the north of Ireland, whose elder brother, then about twenty, presented the following appearances. The right eye was perfectly normal, and of a bluish grey colour; the left, on the contrary, was yellowish brown, the iris tremulous, the pupil placed in the upper and outer third of it, not larger than a good-sized pin's head, and

(*a*) I cannot allow this opportunity to pass without expressing to Captain O—— my sense of the obligation under which he has placed me by permitting the drawing of his eyes, from which the accompanying wood-cut was made, to be taken.

totally incapable of motion. Although he had vision with this eye sufficient to find his way, it was totally useless in reading or for examining minute objects.

Demours has accurately figured the eccentric pupil(*a*). Schwartz believed it to be at times hereditary: he saw two sisters in whose left eyes the pupils occupied the inferior ciliary edge of the irides, and in whose right eyes they were placed superiorly; in the brother of these girls the pupils were placed superiorly in both eyes(*b*). Similar remarkable cases have been related by Ritter, Baer, and others; these, however, are sufficient to explain this portion of the subject, my object being to present the profession with types of the various malformations, without entering immediately into the description of each different variety, and to illustrate this essay, as far as in my power, with original engravings.

Almost similar in appearance to the instances mentioned at p. 268 is that shown by this illustration, which represents a a high degree of congenital permanent contraction of the pupil (*Microcoria*) in the left eye. The iris was greyish at the circumference, but light cinnamon-coloured towards the pupillary margin. This person was remarkably near-sighted.



I have seen cases of *Mydriasis* in which it was stated that the enlargement of the pupil was observed so shortly after birth as to make me believe that they were congenital; very little disturbance of vision was experienced in after life. In congenital amaurosis we have sometimes well-marked dilatation.

Dyscoria or *Coremetamorphsis*.—The three forms of pupil figured here, which are copied from Ammon's great work, together with those upon the opposite page, may be taken as

(*a*) *Maladies des Yeux*, plate 64, fig. 1. (*b*) Quoted by Rau, vol. ii. p. 167.

types of the varieties which this aperture presents. The variety of form, however, which the pupil presents, independent of loss of parenchymatous structure, is infinite,—triangular, comet-shaped, oval, heart-shaped, fringed, irregular, linear, and even square. Here is a specimen of well-marked irregularity of the pupillary edge of the iris, in connexion with central opacity of the capsule of the lens, where the aperture is stellated, apparently caused by persistence of portions of the pupillary membrane.

Sometimes we find a sort of fringe projecting into the pupil at one point, as is the natural condition in several fishes, the ray, for example; and again, in other cases, we observe a single knob or projection jutting into and distorting the pupillary circle, as in korestenoma.

Himly observed a case where the pupillary opening was not circular, but indented to the depth of a line. In one eye he saw several such indentations, so that the margin of the pupil formed seven small semicircles(*a*). The idea is forced upon us that several of these abnormal conditions are the result of disease *in utero*. One of the most remarkable forms of pupil which I have yet met with is shown by this figure, for the drawing of which I am indebted to my friend Mr. W. W. Cooper. It represents the right eye in a female infant, none of whose progenitors ever had any peculiarity of the visual organs. The eyes were similar on both sides; the irides were a mottled brown or hazel, and each pupil in its contracted state presented a fine transverse line extending nearly across the entire breadth of the iris, but dilating into an elliptical aperture in a modified light, or under the influence of belladonna. The

(*a*) Wardrop, vol. ii. p. 38.

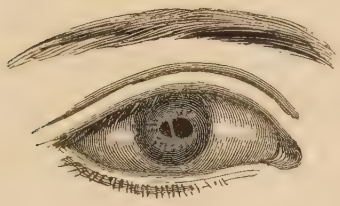
vision was perfect, and there was no hereditary tendency to malformation of the eyes.

While passing through the wards of Steevens' Hospital a few years ago, my attention was attracted by a young man then labouring under an accident, whose eyes presented the very extraordinary and unique peculiarities shown by the accom-

panying engraving. The palpebral apertures were rather narrow and elliptical; the globes and corneæ natural; the irides were dark brown. Upon the right side there existed a large triangular pupil, extending right across the iris (which was of a homogeneous dark brown), its edges slightly curved, and its entire margin bordered by a narrow band of a bluish tint. In the left iris, which was lighter in colour and its striæ more developed, there were two pupils, the internal one triangular and extending from about the centre of the membrane to its ciliary attachment; its edges bordered with a light brown margin paler in colour and more dense in appearance than the surrounding iris. The external pupil, situated between that just described and the outer edge of the iris, was perfectly circular, and in its medium state of the size here represented, for it alone of the three pupils seemed to be susceptible of motion, at least to any extent. It was surrounded by a well defined broad band or circle of slate-coloured blue, about half a line in breadth. The radiating lines of the iris all appeared to tend to this pupil. The person who was the subject of this malformation was rather dull of comprehension, and totally uneducated; he stated that he followed his occupation, that of attending a lime kiln, without inconvenience; but it was manifest that

his vision was not good. In this case we have a complication of irregularity, malposition, deformities, and plurality of pupils, as well as a form of coloboma.

Polycoria or a plurality of pupils, though rare, is not by any means an unknown irregularity. One of the simplest forms is that shown by the accompanying wood-cut, representing the right eye of a gentleman of my acquaintance, where a simple band, probably a remnant of the membrane of Wachendorff, crosses the normal opening and produces an hour-glass or figure of 8 pupil, both sections of which are obedient to light. In this case the other eye is perfectly natural, and this gentleman sees equally well with both eyes. Another case is that in which there is a normal pupil both in size, form, and situation, with a deficiency upon one side of the iris, which, however, is separated from the true pupil by a narrow band of the free edge of the iris, which separates it from the latter, thus causing a second aperture. But for this band the case would be one of coloboma iridis, a peculiarity to be described further on. An instance has been recorded of three pupils, the lower one being circular and natural, although misplaced, and the two upper mere elliptical apertures(*a*). In all the instances of polycoria which I have met with or seen described, except that figured on the opposite page, the second pupil was irregular in form. None of the cases of plurality of pupils that I have met with had double vision.



(*a*) This case is figured by Von Ammon, vol. iii. plate ix. fig. 24. In one of our ancient Irish manuscripts we read that Chucullan, the celebrated Irish chieftain, had a plurality of pupils in one of his eyes; and also of Ingil, son of the King of the Britons, who had an eye as large as an ox. Many instances of this nature might be adduced from our early Irish chronicles. See the Author's Introductory Address, in the Lancet for April 19, 1845.

Himly relates a case in which the normal and abnormal pupils alternately contracted and dilated. Wardrop says that "sometimes a double pupil is met with in one eye when other parts are single; and sometimes both lens and pupil have been found double"(*a*). I have never known an instance of double pupil in both eyes, nor have I ever heard of such. Polloplasis pupillæ, as this deformity is styled by some recent German authors, is occasionally observed among the lower animals, thus Sybel saw it in the eye of a calf; and a preparation of this nature is shown in Mickel's celebrated anatomical collection at Halle. This deformity will again come under our consideration when describing the eye in the cyclops monster.

Atresia Pupillæ, or *Sinizesis Congenita*.—The closure of the iridial aperture produced by persistence of the pupillary membrane, is, in all probability, a much more frequent disease at birth than we are aware of; but as it seldom remains permanent for any length of time, and very rarely engages the attention of the surgeon, it has been to a certain degree overlooked. Cases have been recorded by Wrisberg, Wenzel, Cheselden, Von Ammon, Paolo Bernard(*b*), and others. I gave the history of Dr. Bernard's case (which was mistaken for opacity of the crystalline capsule), in my last Ophthalmic Report (p. 499). "When it is not observed after birth, it appears," says Wardrop, "in the form of an opaque web, which is easily distinguished from cataract by its being vascular, from the size of the pupil being unaltered, and from its being on the same plane with the iris." It is probable that persistence of the membrane may be owing to some iritic inflammation *in utero*. Occasionally small spurs of dark coloured membrane may be seen in adult life,

(*a*) Morbid Anatomy of the Human Eye, vol. ii. p. 40. In this case he refers to "*Voigtel's Handbuch.*"

(*b*) *Gazetta Medica di Milano*, for 26th Dec. 1846, quoted in the May Number of this Journal for 1848; see also M. J. Cloquet's *Memoire sur la Membrane Pupillaire*, Paris, 1818; and Dr. Jacob's valuable paper on its anatomy in the twelfth volume of the Medico-Chirurgical Transactions.

jutting out from the place of attachment of the pupillary membrane on its anterior margin.

I have remarked that, in most of these cases of malformed irides and pupils, the colours differed materially from the normal hues in healthy eyes. There is a want of brilliancy upon the surface of the membrane; the general colour is, as it were, dirty; the greenish and slate-coloured tints sometimes produced by disease in after life predominate towards the ciliary margin; and the pupillary circle, in the great majority of instances, is of a light cinnamon or yellow colour.

Tremulous Iris.—There can, I think, be little doubt but that tremulous iris is occasionally a congenital defect. In this disease a portion of the iris at some particular spot waves backwards and forwards upon the slightest motion of the eye or head. When the whole iris oscillates, as sometimes happens after the removal of the lens, or from the effects of concussion, it is believed to result from a want of support caused by fluidity of the vitreous humour. This hypothesis, however, will not explain the phenomenon of partial oscillation of the iris, which appears to result from paralysis of some of the radiating or dilating fibres of the iris. I have occasionally seen cases of paralysis of a portion of the circular or contracting fibres of the iris, causing distortion of the pupil at that particular point. If the iris be carefully examined in these cases, particularly in its contracted state, it will be seen that the usual plaits, or folding in as if by a running string, of the free edge of the iris, are deficient at this point, the surface of the membrane being there quite plane and smooth and the colour less intense. Should we not reckon among the congenital peculiarities the voluntary power of contracting and enlarging the pupil which it is said some persons are endowed with?

Coloboma Iridis.—This term has been applied by ophthalmic pathologists to a deficiency of the parenchymatous structure of the iris at some particular point, generally in the lower segment, by which the pupil presents the pear-like or

key-hole appearance shown by some of the accompanying illustrations. Two forms of this disease have been enumerated by writers: that caused by accident, with which we do not here deal, and that which presents as an unnatural formation at birth, *Coloboma Iridis Congenitum*, or *Iridochisma*. This peculiarity was first named by Walther of Munich, who described it in 1810, and afterwards in 1821. Since then the subject has been frequently discussed in various medical periodicals in Europe, and the defect is now usually enumerated in ophthalmic works under the head of the congenital diseases of the iris. This author was not, however, altogether original in his discovery of coloboma, or split iris, for it is manifest that some of the very early writers were acquainted with it. Thus Thomas Bartholinus not only mentioned but figured it so early as 1672. The pupil figured by Bartholinus is of the true key-hole shape; his description of it is, "huic pupilla sinistri oculi non rotunda, ad oblonga est hac forma sine detrimento aut mutatione visus"(*a*). But in those days congenital peculiarities, which were usually denominated freaks of nature, received but little attention from pathologists. Block, Meckel, and other writers of those times, also noticed it.

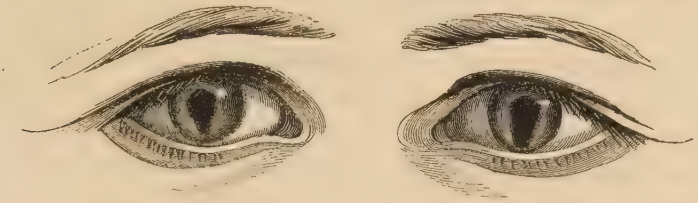
Mr. Wardrop, although he did not name this "malconformation," was perfectly well aware of its occasional existence, when he published the second volume of his Morbid Anatomy of the Human Eye, in 1818; and, under the head "of alterations in the form of the pupil," quotes most of the authorities then known on the subject of coloboma.

I myself have seen ten, and had drawings made of seven cases of coloboma, and a sufficient number of instances have been enumerated and figured by others to enable modern writers to classify and arrange the different varieties under certain heads.

The most common form consists in a prolongation of the

(*a*) *Acta Medica et Philosophica Hafniensia*, Hafniæ, 1673, p. 62.

natural pupil downwards and slightly inwards, as shown by the annexed engraving of the eyes of a boy aged eight years, the cat's pupil appearance of whose eyes attracted my attention when visiting one of our workhouses a few years ago. This is the simplest form of complete double cleft iris. The irides

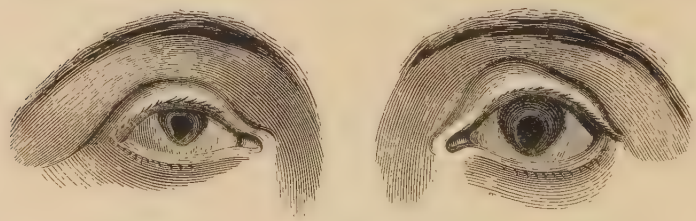


were blue-grey and somewhat deficient, particularly round the lower edge of the prolonged pupil, in those loops and arches which form the marks and circles upon these membranes in a well-developed natural state. The pupils were susceptible of light, and contracted partially, but the upper normal portion much more so than the cleft or prolongation; they did not quite reach to the ciliary edge of the iris. In this, as well as in all the cases of coloboma in both eyes which I have seen, the prolonged pupils slightly converged inwards as well as downwards. This boy experienced no inconvenience whatever from this peculiarity; his sight was remarkably good, and, except among his playmates, the unnatural condition of his pupils had not attracted attention.

Two years after the drawing had been taken, from which the foregoing engraving was made, I had the accompanying illustration of the minute structure of the left iris painted, which shows the whitish radiating fibres round the upper margin of the pupil, ending in a circular light-coloured band immediately surrounding the pupillary edge, but which are wanting in the lower or cleft portion. This drawing

also shows the shoulder which usually exists in such cases at the junction of the cleft and the normal pupil.

As regards position, coloboma may occur in any part of the iris: most frequently, however, it is observed in the inferior section, next to that internally, then outwards, and, rarest of all, it may appear in the upper segment of the iris. It much more frequently exists in both eyes than in one. It may be present, as in the case just figured, without any other peculiarity or defect; but it is often found in connexion with other ophthalmic malformations, particularly micophthalmia, coloboma palpebræ, irregular-shaped lens, split choroid and vitreous humour, and also with cleft palate and hare lip. At page 108 of the former portion of this essay, I described and figured a case of iridochisma connected with microphthalmus and strabismus, &c. Here again is an illustration of a somewhat similar case in Mary Craig, a young woman aged 22, a native of the County Wicklow, of whom I gave an account in February, 1847(*a*). Both eyes are remarkably sunken, the globe of the left is somewhat less than the natural size; the cornea irregular in shape; the iris is a deep brown colour, and wanting its circles and radiating lines; the

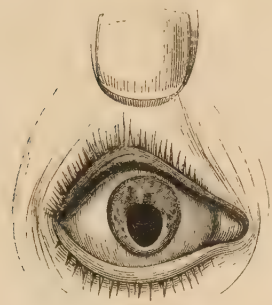


pupil is ovoid and placed in the inferior half of the iris; the superior edges of its upper great extremity being about the centre, and its lower pointed end running down almost to the ciliary edge of the iris. The globe of the right eye is scarcely one-half the size even of the left, and the palpebral aperture, which is a very narrow ellipse, is about a third less than the

(*a*) See Ophthalmic Report in Dublin Quarterly Journal for Feb., 1847.

left; the sclerotic is thin and bluish, and the cornea disproportionately small and irregular. The iris has a homogeneous brown colour, somewhat lighter than that on the left side; the pupil occupies more than one-half its perpendicular diameter, and is somewhat more triangular than that upon the opposite side. There is slight nystagmus of both eyes; her sight is very defective, and has become much worse during the last few years.

The amount of deficiency of the iris in both these cases,—that now related, and the one figured in the previous part of this paper,—resembles more partial iriderimia than true coloboma, in which there is generally some distinction between the segment of the true pupil and the cleft or prolongation.



Although the striæ and circles which mark the well-developed iris were wanting in several of the cases which I have observed, there was in the case of Ellen Sullivan—described and figured at page 108, vol. xxviii. of the former series of this Journal—a peculiar whitish mottling on the upper segment of the blue iris, as shown by the accompanying cut.

Coloboma has been divided into complete and incomplete. The former degree, in which there is a thorough division of the iris, is sufficiently shown by the foregoing illustrations. The latter, or more penetrating form, consists in an apparent attempt at fissure, the external parenchymatous and coloured substance of the iris being deficient, thus allowing the dark pigment of the uvea to appear anteriorly through the thin transparent membrane of the aqueous humour(*a*), as is

(*a*) It is possible that the solution of continuity which originally existed in the embryonic state in this case may have subsequently healed *in utero*. I am acquainted with a child who was born with a well-marked cicatrix a little to the right of the mesian line of the upper lip, and bearing all the characters of a united hare-lip.

well exemplified in the accompanying illustration, which has been kindly placed at my disposal by my friend Mr. Dalrymple, of London. In this we find a perfect iridochisma of the right eye in a young man aged 22, with very light hazel irides, whose globes were also somewhat smaller than natural. Upon the left side the pupil is circular, but an irregular dark space,

extending downwards from it to the margin of the cornea, marks the partial cleft of the iris. Dr. Rau, who, I believe, first called attention to this form, has mentioned a few similar cases(*a*). Helling has also seen the disease.

Gescheit enumerates three varieties or degrees of coloboma: first, that with parallel edges, of which the accompanying representation affords a good idea. Second, with convergent legs, which is the most common, and of which the foregoing examples of pear-form pupils are sufficiently characteristic. And, third, that in which the base of the coloboma is below or placed next to the ciliary edge. The last is the rarest form. The third engraving, under the head of dyscorea, at page 270, as also the pupils figured at page 272, are illustrations of it, Ammon has given but two cases of this variety.

The edges of the cleft are seldom linear, they are usually slightly curved, sometimes irregular, usually thin, and occasionally deficient of pigment, and there is very seldom a perfect correspondence or a similarity between the fissures upon both sides; and in the best marked cases there is a sort of shoulder defining the limit of the original pupil. As already

(*a*) *Die Krankheiten und Bildungsfehler der Regenbogenhaut.* Bern, 1845.

stated, the internal or pupillary circle of the iris does not surround the cleft, but is either altogether wanting in the iris, or, existing round the upper circular portion of the pupil, it gradually shades off towards the part where the cleft commences. In some cases, as in that of Mary Craig, whose eyes are figured at page 278, the coloboma is nearly circular in the right eye, and egg-shaped as in the left.

In addition to the forms already specified, I may add the accompanying very rare peculiarity, for the drawing of which I am indebted to Dr. Butcher, who was good enough to procure it for me from Dr. M'Evers of Cork. Although not drawn very artistically, it is, I believe, a faithful representation of this very singular variety of malformation. It shows the left eye of a young man aged about 20, with auburn hair and bluish grey eyes. In this case the globe was normal, but the pupils occupied the greater portion of the iris, and were completely triangular, the inferior point almost touching the ciliary circle. They were nearly symmetrical, that on the right side, however, was somewhat narrower than that upon the left; their lateral edges were straighter and sharper than is usually the case, but the internal edge was slightly irregular upon both sides; and the superior one was somewhat curved. I have not been able to learn more of the history of this case. Dr. Mess of Leyden has recorded a similar case of V-shaped pupil(*a*). Rau saw double coloboma, in which two small narrow splits, placed close beside each other, existed in the same iris.

As I already stated, there is frequently very little defect of vision in cases of simple coloboma uncombined with other malformations. From the variety of opinions which have been

(*a*) *Annales d' Occulistique*, tom. vii. p. 179.

expressed with regard to the influence of belladonna, it is manifest that great variety must exist with regard to its effects, depending, no doubt, upon the amount, degree, and position of the cleft, and the perfection or deficiency of other parts of the organ. Dr. Mackenzie, in describing a case of coloboma in 1831, says, "both the natural pupil and the cleft proceeding from it contracted on sudden exposure to light, but the cleft slowly, and not so as to close, at least in a modified light"(*a*).

Mr. Middlemore, in describing cleft iris, under the title of "Cordiform Pupil," says, "The prolongation of the pupil possesses the power (though not in a very active degree) of contraction, so that when the eye is suddenly subjected to the influence of a vivid light, the cleft in the iris is nearly closed, and the defect in the form of the pupil is scarcely visible." Such, however, has not been my experience. I have never seen a case in which the cleft "nearly closed" under any circumstances.

There can be little doubt of coloboma being hereditary. Wardrop's work contains the following facts and authorities on this subject: "Block knew a family in whom the father, with his children, nephews, and nieces, had long-shaped pupils. One of the daughters and one of the nephews had in one eye the pupil oval, and in the other it was circular. Conradi mentions

(*a*) London Medical Gazette, vol. ix. p. 738, 1842; see also the article Coloboma, by Mr. T. Wharton Jones, in the Cyclopædia of Practical Surgery, part viii., and also his Manual of Ophthalmic Medicine and Surgery, page 319; see also Middlemore's Treatise on the Diseases of the Eye, vol. ii. p. 761; Seiler's *Beobachtungen Urspruenglicher Bildungsfehler und Gaenzlichen Mangels der Augen Bei Menschen und Thieren*, fol. Dresden, 1833.

Since the first portion of this essay was published, M. Desmarres of Paris published his *Traite Theorique et Pratique des Maladies des Yeux* (1847), in which he includes the congenital malformations. This portion of the Parisian oculist's book possesses little originality, and is very defective in reference to cases published in Great Britain. The latest and best work upon the subject is *Die Krankheiten und Bildungsfehler der Regenbogenhaut*, von Dr. Wilhelm Rau.

that he knew a father, daughter, and grand-daughter, in whom the under margin of the pupil was, as it were, cut out; the pupil consequently was not round but oval, and run oblong to a point at the lower part. Hagström saw a whole family, in which each member had such a large oval-shaped pupil that the under edge of the iris had quite vanished. Acrell saw a similar deformity, which was hereditary."

Rau assents to the same opinion, and adduces many instances in support of it. Himly records the fact of three children in one family, and the father and son in another, being affected with it.

Several hypotheses have been put forward to account for coloboma iridis. By most authors it is believed to be an arrest of development at a very early period of uterine life, when a cleft naturally exists, it is said, in the choroid, which occasionally runs on into the iris. In a case dissected by Ammon, not only was the iris cleft but also the choroid, retina, and the ciliary processes; and externally a bluish projection corresponding to the line of the fissure was observed in the sclerotic. This case bears out the theory of Walther, already referred to; but Rudolphi and Udgin, who had likewise opportunities of dissecting cases of coloboma, were unable to confirm the observations of the Dresden author; but they found the lens deficient at its lower part and the vitreous humour fluid. Moreover, we frequently find coloboma existing in situations where no fissure of the choroid has ever been observed, as on the upper and outer sides. Comparative anatomy, it is true, rather confirms the views of Walther and Ammon, for in several fish and some molluscs we find both the sclerotic and retina cleft. In birds, and also in some amphibians, there is a cleft in the choroid and sclerotic, and, it is said, in the iris of the sheep fœtus also. Irregularity of the cornea, protuberance of the sclerotic along the line of the cleft, and congenital cataract, are often found in connexion with coloboma. According to Gescheit the iridochisma is owing to the non-closure of the choroid split Seiler believed it to

be caused by a want of perfect anastomosis, or accidental obliteration of the iris vessels. Baer believed that it was owing to the too rapid absorption or over absorption of the pupillary membrane. In some instances the ciliary body is distorted and prolonged, or bent backwards behind the end of the split, but not interrupted.

Iriderimia.—The iris has been found altogether absent, or only partially present. To the total deficiency of the iris the term *complete iriderimia* has been applied; and when there is only a rudimentary portion of the membrane existing at birth, the word *partial*, or incomplete, is used. So many instances of this peculiarity have now been observed, that it is only necessary to make a selection of the most remarkable and characteristic cases. Without coloured engravings it would not be possible to convey, by means of illustrations, anything like an adequate idea of this malformation.

A very interesting case, of total loss of the iris, occurred in England in the year 1826, in a girl, in whom, shortly after birth, her mother remarked a peculiar general blackness of the eyes,—the usual characteristic of this affection. Upon examination it was found that both irides were deficient; the corneæ were more prominent than usual; and there was great intolerance of light, as well as irregular motion or trembling of the globe. When the child was two years old the eyes became more steady, and the light was more tolerated, but vision was very defective. She saw better in the evening or in a modified light,—nay, as the observations were extended, and the child became more sensible, it is reported that she could distinguish objects even in complete darkness, or at least what would be considered so by any other person. She liked to look at the most brilliant colours, such as scarlet and yellow; and when examining objects she always placed them very near the eyes, and somewhat below the usual axis of vision. If placed in a darkened room, and the rays of light were made to fall upon the eyes, "they assumed," says the narrator, "a sort of

reddish phosphorescence, like rubies, or burning coals."(*a*) The other senses were all natural.

Another case of congenital deficiency of the irides, both total and partial, is related by M. Cazentree, of Bordeaux, in a man aged 46. In this case there was no vestige of iris in the right eye, and the left presented merely a slight crescent-shaped slip of this membrane. Both corneæ were a little convex, and somewhat smaller than natural; the ciliary ligament is said to have projected inwards, and performed somewhat the office of an iris. At first this case was considered to be one of total blindness, but as the child advanced in years the eye became less sensible to the over stimulus of light; and at the period when examined by M. Cazentree, although there was great disturbance of vision, the subject of the malformation could distinguish objects placed near him. Great photophobia still existed; the lids were usually kept closed during the bright part of the day, and he experienced great pain in the orbits when his eyes were exposed to strong sun-light. By candle-light all objects appeared to him as if enveloped in a thick fog, but it is said that he was able to read in a degree of darkness where it would have been quite impossible for any one else to have done so.

Shortly after this case was recorded, Mr. Willisford published a somewhat similar one of *partial iriderimia,* in which the corneæ were natural. On the outer and lower side of each eye a small section of a greyish membrane, the rudimentary iris, still existed; there was great vacillation, which was a good deal increased by excitement. It was observed that, while nursing, "the child would keep its eyes fixed on the sun for several minutes together, without showing any uneasiness;" and yet, in the subsequent history of the case, we are told that when the child was four years of age it could pick up

(*a*) A question here suggests itself as to whether the brilliancy of the cat's eye in the dark is not owing to the complete expansion of the iris, and not to any tapetum structure.

a pin from the ground. In this instance the head was somewhat deformed, and hydrocephalus existed in the family.

Von Ammon mentions three sisters, born without irides, and the father of these girls had only a rudiment of the iris at the lower margin of the cornea.

Gutbier, who has written an inaugural dissertation on this defect, mentions the following curious circumstance with regard to its hereditary transmission. Christian Keal, the youngest of eight brothers, each of whose eyes were normal, had this defect. He had eight children, of whom three boys inherited the malformation of the father. The eldest of these had four sons, in whom the irides were absent in all except the second, who possessed it but only in a rudimentary form. The second son of the original Christian Keal had a daughter, in whose eyes the irides were deficient; and the third had two children, a daughter, with deficiency of the irides, and a male child with eyes well-formed. These cases are quoted by Mr. Lawrence.

In *partial iriderimia* there is generally but a small segment of the lower or inner edge of the iris existing, as I have explained in some of the previous cases; but Demours has given a drawing and description of a congenital deficiency of about a third of the inferior or inner edge of the iris, which I believe is the only instance of the kind recorded. In most cases the segment of the iris forms a slight crescentic projection: but in Demours' case the edge of the iris was nearly straight; the iris itself was brown, and there was no pupil. These remarks are chiefly founded on the drawing, as his description is very defective.

In both the complete and incomplete varieties cataract has frequently been observed; and even in cases where at birth the lens was perfectly clear, either it or its capsule became subsequently opaque, probably owing to the constant over-exposure to light; therefore, in such cases, means should be taken either by coloured glasses, or some mechanical contrivance analogous to the pupil, to obviate, if possible, the occurrence of this acci-

dent. Carron du Villers has recorded some cases of iriderimia connected with tremulous cataract and nystagmus. The least degree of partial iriderimia is, perhaps, but an aggravated form of coloboma, of which the drawings of the eyes of Sullivan and Craig afford examples. Ammon has figured a case in which two distinct half-moon-shaped segments of the iris existed at the lower part. Lusardi has recorded a case of total absence of the iris in one eye, and in the other of the same patient a remnant of the iris, a line broad, existed. Henschel observed a rudimentary iris in a man whose children had no irides at all. Willis, Helling, and Rau, have observed cases where there was considerable deficiency of the anterior layer of the iris, resembling somewhat the form of partial coloboma already described. In looking over the records of cases of defect of iris it appears that females are much more frequently the subject of it than males, but Forchon observed it in three generations of the same family in males only. The partial form of the disease is much less frequent than the complete. In the *Annales d'Oculistique* will be found several instances of both these defects. Many years ago Morrison observed this peculiarity in London. Mr. Middlemore has given, in the first volume of his Treatise on Diseases of the Eye, a most accurate description of two cases which he had an opportunity of observing; and Mr. France has also given, in Guy's Hospital Reports, the history of a very interesting case which is particularly valuable, from his observations having been continued for a great length of time. It would not, however, increase the value of this essay to multiply instances beyond those which I have now afforded.

MALFORMATIONS OF THE CHOROID.

Peculiarities of Colour.—The abnormal conditions discovered in the choroid membrane at birth are comparatively rare, and, owing to the scarcity of dissections, as well as to the concealed position of this structure during life, very few cases have

as yet been observed or described. In the foregoing observations upon the congenital defects of the iris most of the remarkable peculiarities of the choroid have been detailed, especially under the head of leucosis, where there is either a *partial or total deficiency of its pigment.* And again, in connexion with certain cases of coloboma iridis, the split or fissure of the choroid has been found existing in later life, and extending backwards through the entire length of its inferior portion. This, however, is but an arrest of development, like that which occurs in other congenital fissures, for, as has already been shown, in considering the anatomy of this part, a cleft exists as a normal condition in the early embryonic state.

Instances of partial deficiency of pigment, in which the inner surface of the membrane presented a greyish mottled appearance, have been observed, of which Ammon gives some examples: one in particular, where the iris exhibited the same speckled appearance. In cases of glaucoma it has been observed that the colouring matter of the choroid assumes a lighter tint; and specimens of this peculiarity have likewise been observed at birth, both in man and some ruminating animals. Dr. Prinz, of Dresden, has described a form of congenital glaucoma, which he has several times seen in lambs where this peculiarity existed. The choroid has also been observed of a reddish brown or fawn-colour, particularly at its fundus.

The converse state to leucosis, that of preternatural development of the pigmentary matter, has been remarked in certain cases of congenital hydrophthalmia and amaurosis, as well as in cyanosis. I have, however, seen a case of congenital amaurosis in which there was a well-formed blue iris, where a light coloured, tapetum-like appearance presented at the bottom of the eye, very different, however, from the condition presented in malignant disease, and too deep to have its seat either in the posterior capsule of the lens or in the vitreous humour surrounding it.

Deficiency of Choroid.—Coloboma choroidea has been al-

ready described. An instance has been recorded by Von Ammon of a partial transverse fissure of the choroid immediately behind the ciliary body, the two portions being joined by a kind of net-work(*a*). I can find but one well-marked instance of total absence of the choroid; it is that related by Klinkosch, of Prague, in 1766(*b*). In the case in which this peculiarity existed, the eyes were in other respects remarkably malformed, and more resembled, it is said, hydatids than true visual organs. There is no mention made of the state of the iris in this case; but Seiler, in quoting it, says the ciliary body was partially present.

The double choroid and the fusion of the vascular membrane of the eye will come under consideration when the subject of monoculi is investigated. The number of ciliary processes is said to vary exceedingly in different eyes; their distortion in cases of coloboma has already been remarked.

(*To be continued.*)

Art. VI.—*On the Progress of Asiatic Cholera.* By Robert J. Graves, M. D.

In the sixteenth volume of the first series of this Journal I published a sketch of the origin and progress of Asiatic Cholera, and brought forward evidence which appeared to warrant the conclusion that it is propagated chiefly by means of contagion. The collection of materials for that paper occupied much time, and their arrangement cost me considerable labour; nor did I arrive at the result there sought to be established without the most assiduous reflection, and a conscientious interpretation of recorded facts.

(*a*) *Klinische Darstellungen der angeborenen Krankheiten*, tab. xv. figs. 7, 8.

(*b*) I have not seen Klinkosch's work. It is thus quoted by Seiler: "Programma quo anat. partus capite monst. proponit." Prag. 1766, p. 7. It is referred to by Himly, Ammon, and all the German writers upon the subject.

The recent progress of the disease, as it bears upon this subject, is treated in the second edition of my Clinical Medicine, just published, and I must refer the reader, for additional arguments, to the Lectures on Cholera contained in the first volume of that work. Still, as Lord Morpeth, in the House of Commons, and the Sanitary Commissioners appointed by Government, have expressed an opinion contrary to what I have set forth, I am bound, in justice to myself, to bring forward additional evidence in favour of the conclusion I before advocated. But other, and still more powerful reasons induce me to resume the subject at the present moment; for I find that the non-contagious nature of cholera is so authoritatively maintained, that everywhere throughout the country, physicians, when consulted, have advised that the sheds built for the reception of fever patients should not be retained for the purpose of accommodating persons attacked with cholera; and, swayed by their opinion, the poor law guardians have already ordered several of these temporary hospitals to be pulled down.

The manner in which the former and the present epidemic of cholera has diffused itself,—travelling, year after year, by the main routes of communication, until it has visited almost every civilized country on the surface of the globe,—presents what at first appears an unparalleled example of the extension of disease; but it is only so in appearance, because other diseases have also spread similarly, although, their diffusion having happened at a time when the communication between countries was rarer, and intelligence was not obtainable concerning the history of their propagation, their progress was not noted with the same accuracy, and the date of their arrival at each place was unrecorded. There can be no doubt that the spread of syphilis offered something analogous; and that small-pox, measles, and scarlatina,—of the date and locality of whose first appearance we are ignorant,—extended themselves in a similar manner, and were found in every country holding intercourse either by land or sea with those where they originated;

and, consequently, while these diseases were long-established scourges all over the three continents comprised within the limits of the old world, Australia and the Americas, together with the isles of the Pacific, were spared, until the discoveries of modern navigators had opened a path to those extensive regions also. Thus it is that in everything human we find a mixture of good and evil; even the most splendid discoveries, no matter how pure their conception, lead not to results always free from alloy. The rapid communication that now binds the most distant parts of the world together, and which causes the journals of London to be daily encyclopædias of what is simultaneously telegraphed from the most remote countries, might be supposed to be capable of producing nothing but unmixed good. But it has been evidently the cause of a serious change in the moral, intellectual, and social state of the world, the consequences of which can as yet be scarcely appreciated. Nations are now no longer insulated collections of individuals, so separated that the events occurring in any one are scarcely felt even by its neighbours. The passions, the emotions, the constitutional struggles of a people, soon overflow the boundaries of their country, and roll on like a tidal ocean-wave, which breaks successively on every shore; while, as is proved by events quite recent, governments are powerless in their attempts to construct artificial ramparts to stem its progress. Whether this may ultimately be productive of moral benefit to the human race, is a question that can be only solved by futurity. But it can admit of no doubt that the inter-communication between distant countries not only renders us acquainted with the wants of each individual member of the general society of nations, but stimulates us, from interested motives, to relieve them; and, consequently, the physical condition of man must, by this means, be in many respects improved. As an instance of the important benefits which arise from this daily contact between nations, we may adduce the impossibility of the recurrence of such famines as frequently half

destroyed the populations of Europe and Asia in the dark ages.

Had a calamity such as threw its dark shadow over Ireland in 1846 occurred a thousand years ago, what succour, what aid, could have been expected? A whole nation might have perished, and the knowledge of its fate would have extended scarcely beyond the nearest ports of the now sister island; but Providence timed it otherwise, and the intelligence of the disaster, everywhere conveyed, everywhere excited sympathy; and so active were the efforts to relieve, that, long before the year of trial had expired, contributions had reached us from Australia, New Zealand, Ceylon, the farthest India, the most remote Africa, and from our American kinsmen: contributions which, added to the gifts presented by European, and, above all, by English benevolence, brought to our shores such a supply of food, that this people survives, a monument of the combined love and charity of the whole family of mankind.

But this evident and paramount advantage is, as we have seen, to a certain extent counterbalanced by the fact, that the caravans and ships which transport the comforts, ornaments, and means of life, which convey merchandise and food, may arrive likewise freighted with the seeds of death, with plague, fever, or cholera.

It becomes, therefore, a state question of great importance, in a country like England, in whose ports vessels arrive every hour from various quarters of the world, how far it is possible, under such circumstances, to prevent the importation of disease. Where the contagious malady, such as the plague, is usually confined within certain limits, and can only obtain an exit from the territory it infests through a small number of given outlets, then other states may guard against its importation by imposing quarantine upon vessels coming from the infected ports. But it is far otherwise with regard to the cholera. Advancing from the east, it has travelled slowly and steadily during the last few years through Russia, and at the present moment forms a semi-

circle, stretching from Egypt through Turkey, Hungary, Poland, and Finland, and is travelling along the radii of communication towards the central parts of Europe from so many points, that the idea of protecting ourselves by quarantine from its importation must be abandoned. We must bear in mind, too, that Great Britain chiefly depends on trade for the support of millions of her population, and that any quarantine laws which had the effect of closing all the channels of her commerce (and, to be efficacious, they should close them all), would speedily produce such distress in the manufacturing districts as would occasion starvation so intense and extensive, that more deaths would arise from the operation of this cause alone, than could possibly be produced by the introduction of any disease, however infectious. Connected as we are, therefore, by our commercial intercourse, with every country and every climate, we must submit to the dangers which may arise from this new consequence of commerce, —*free trade in diseases.* But, although the question respecting the infectious nature of cholera does not concern the quarantine laws, and can lead to no curtailment of the activity of our merchants, and though the knowledge of its being infectious may not serve to guard us against its incursions, it may, nevertheless, materially aid us in diminishing the extent of its ravages. If the disease be not contagious there is no danger in placing cholera patients in general hospitals; there is no use, so far as guarding against the extension of the disease, in removing the sick from private dwellings; and such indeed is the view of the case taken by the Dublin Sanitary Association, as appears in the following extracts from their Circular:

"1st. As the Sanitary Commissioners of London, after long and careful investigation, have come to the conclusion that the disease is epidemic, and not contagious; and as the fear of contagion, in the last epidemic of cholera, caused a great panic in those who were unaffected, and led to a neglect of the

sick at a period of the disease when assistance was most valuable; the sub-committee recommend that on the first appearance of cholera a placard embodying this opinion should be extensively circulated among the poor, for the purpose of removing their apprehensions."

"4th. The London Sanitary Commissioners having given their opinion against the establishment of large cholera hospitals, and in favour of providing cholera wards in existing hospitals for the very destitute, and having come to the conclusion that all but the very destitute would have a better chance of recovering by staying at home, your sub-committee, coinciding in these opinions, recommend that depots of clothing, blankets, flannel, &c., be established, in addition to the ordinary medicines, in order to meet the necessities of those patients who may not avail themselves of the hospitals.

"5th. And further, that, for the purpose of securing attendance upon this class of patients, a corps of nurse-tenders be formed, whose names shall be registered at each parochial dispensary, and who shall be placed at the disposal of the cholera physician, under regulations to be hereafter drawn up."

I am glad, however, to find that at a meeting of the Dublin Sanitary Association, held on Wednesday the 24th of August, the following sensible observations emanated from the Chairman, Sir Edward Borough, whose exertions have been so eminently useful to the citizens of Dublin in directing the exertions of the poor law guardians of the South Union:

"The Chairman stated that the bill brought in by Sir W. M. Somerville, on the 10th of August, continues the Acts 10 Vict. c. 6, and 10 Vict. c. 22, re-enacting the same system of appointment of relief or hospital committees, but repealing such portions of both as enacts the payment of expenses out of the funds at the disposal of relief commissioners. Clause 5 enacts that, provided three members of relief committee certify expenses, &c., the board of guardians shall pay same out of the rates. The Chairman continued to say that, from a conversa-

tion which he had recently with some medical men of great eminence, and much experience in the city, he was induced to submit the following suggestions emanating from them to the committee of the Sanitary Association. It is very strongly recommended that the city of Dublin should be divided without loss of time into districts, and sanitary committees should be formed in these districts, so as to be prepared with the machinery for working the bill introduced into the House of Commons on the 10th of this month, in the event of the visitation of cholera, fever, or other disease, whether epidemic or contagious. There ought to be four cholera hospitals for Dublin, *i. e.* two in addition to the late temporary fever hospitals. To each should be attached a superintendent and a medical assistant for every twenty-five patients; all to reside within the hospital, and to be provided with breakfast, dinner, and a bed in the building. There should be prepared a list of thirty such assistants (say medical students, if licentiates cannot be procured), from which the staff of each hospital, as it is wanted, can be completed; and suitable arrangements should be made for the transport of patients from their own dwellings, it being manifest that patients among the poorer classes, such as roomkeepers, can scarcely be treated in their own dwellings, and that they ought to bere moved to hospital. Simple forms of treatment on the first appearance of premonitory symptoms, and general directions, clearly and intelligibly drawn up, should be prepared and got ready for circulation, as has been done in Russia. All these arrangements may be made quietly, so as not to alarm the public; but, coming as these recommendations do from a most experienced quarter, the Chairman considered them to merit serious consideration. The Chairman, in continuation, drew the attention of the Committee to the resolutions of the Medical Committee of the Manchester Royal Infirmary, in which the erection of special cholera hospitals had been advocated."

Nothing appears to me to be more consistent with previous

experience and the dictates of common sense, than the arrangements here proposed by Sir Edward Borough.

In the years 1832 and 1834, four large hospitals were provided by Government for the reception of cholera patients, and ample means for carrying them to the public institutions were everywhere at hand. The working of this system was most satisfactory; and the smallness of the number attacked, compared with the population of the city, may, I am persuaded, be accounted for by the sick being so quickly taken from amidst the healthy, and thus a focus of contagion in each case avoided.

Advocating as I do the establishment of hospitals for the reception of cholera patients, I am by no means prepared to deny that in many instances the removal of the sick will be attended with fatal results, and that consequently it would be wiser to have them treated at home; and I am glad that my opinion receives the support of Dr. Cane, who thus expresses himself on the subject(*a*):

"Hospital accommodation should be ready in every locality for those who have no homes, for those whose homes are wretched and miserable, and for those who, either sent by their friends or at their own desire, will seek its shelter. In addition to such hospital accommodation, arrangements should be made for attendance upon the sick at their own homes; and the physicians intrusted with this duty should have a power to employ nurses, and order all suitable nourishment, as well as medicine. Those visiting attendants should have a discretionary power, whom to attend at their own residences, and whom to recommend to hospital; such should always be decided by a medical man, and not by mere officers of health.

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. . There are many disadvantages in the removal of a patient in confirmed cholera,—so many disadvantages, that they never should be encountered at all, unless where they are

(*a*) Dublin Medical Press, August 16, pp. 98, 99.

preponderated over by some decided advantages, not to be had unless in hospital. Thus in a large rural district, where, superadded to wretched and uncomfortable homes, is the disadvantage that the physician cannot visit over such an extent as often as he should do in justice to the patient. Here hospital accommodation has its advantages. Again, where the sufferers have been seized upon the road-side, or in the fields; or where the home is a cabin, whose damp floor and leaky roof, or unchimneyed stove, or where defective light or ventilation make it an unfit place for the treatment of such disease: but with these and the like exceptions, in no case should the sick be compelled, in violence to their own and their friends' feelings, to pass from home to an hospital. I may be here met by the statement of the superior comfort of an hospital; granted. But these comforts are all counter-balanced, and too often rendered valueless, by a forcible removal. I will take a case,—I have seen it! A patient has been seized with cholera; the diarrhœa, the emesis, the spasms, the raucous voice, the rice stools, are all present; still there is some pulse, some heat of surface, and some room for hope. The officer of health visits him; he must be removed; he pleads, and friends plead for him. His heart is in his home;—it is all in vain; the authorities are brought, he is lifted out of his bed; it may be he is, or is not, rolled in hot blankets, placed in a cot or car, and carried a mile or half a mile to hospital. From that cot or car he is taken into the hospital, and found to be purple, cold, and pulseless. I have seen such a patient dead when the cot was opened. The lifting him in and out, the excitement, the agitation, the fears aroused, and the depression inflicted upon his mind, have turned the balance, dispersed the hopes, and killed the patient. I would not write thus strongly were it not that I feel the terrible conviction upon my mind that such ill-judged interferences have been too frequently murders; and I cannot call to mind a single case of *forcible avulsion* from home, where the disease was true cholera, that ended in recovery.

It is, therefore, a matter of the weightiest import for all authorities, local and otherwise, boards and officers of health, how far those considerations shall weigh with them, and influence the mode of medical aid for the poor."

I have been induced again to take up the subject of cholera, not merely for the purpose of bringing forward matter that I think may be useful to society, by suggesting to our rulers the best methods of medical police to be adopted when the disease arrives in Ireland, but also for the purpose of cursorily pointing out some of the many absurdities that have been broached, both in medical works and the newspapers of the day, concerning the origin, nature, and diffusion of this disease. Thus we find in a London paper of the first authority, that when the fact was noticed of the cholera having travelled from Moscow to Petersburgh, its route on this occasion was declared to be a new proof of its *fluviatile origin*,—an expression, by the by, of which writers seem much enamoured. I would humbly offer, as a slight objection to the accuracy of this remark, that no river flows, or possibly could flow, from Moscow to Petersburgh, as, if water attempted to accomplish the alleged journey, it would have on the way much up-hill work.

In opposition to this fluviatile theory, it is deserving of notice that the boatmen on the Danube, employed in the navigation of boats down that stream, have been but rarely affected by the disease; and simply for this reason, that they hold very little communication with the inhabitants on either bank, having provisions on board to enable them to complete their voyage.

Rivers, as constituting in many countries the chief routes of communication, must, for that reason, be the channels by which infectious diseases are conveyed; but that rivers, marshes, or humid localities, are not in themselves capable of generating cholera, is evident from the fact, that in every quarter of the world places of this description, when out of the line of

march of the cholera, and containing inhabitants who lead a secluded life, have escaped.

In the Hamburgh *Nachrichten*, 26th of July, 1848, I find the following astounding piece of philosophical intelligence, imparted in a letter from Petersburgh of the 12th of July: "The cholera is now considerably on the decrease. That the state of the atmosphere underwent considerable changes upon the approach and setting-in of this disease, has been placed beyond a doubt by the experiments of men of science, who have found that as soon as cholera had set-in there was an almost total failure of the necessary electricity in the air; and that this was accompanied by a notable weakening of the force of the magnet; so that, when the disease was at its acme, the magnet, which in the usual state of the atmosphere was capable of sustaining forty pounds, could not lift more than four or five. During the last week its power has increased to sixteen pounds, and the disease is now on the decline." Intelligence so cheering must have been very satisfactory to the citizens of Petersburgh; an announcement so scientific must have proved most encouraging. This specimen of philosophy has, I believe, found its way into every newspaper in Europe; after which who will exclaim, "*Magna est veritas, et prævalebit*,"—for, surely, in these latter days, it is error that is winged, while truth, unfledged, creeps slowly behind.

Neither time nor space will permit me to notice with the attention it deserves a by no means short treatise that has been written on the fungous origin of cholera(*a*); but I cannot resist laying before my readers, whether for their instruction or amusement, the concluding paragraphs of so learned a work,—paragraphs which, after all, distribute the blame of giving rise to epidemics pretty equally between the animal and vegetable

(*a*) A Disquisition on Pestilential Cholera; being an Attempt to explain its Phenomena, Nature, Cause, Prevention, and Treatment, by reference to an extrinsic fungous Origin. By Charles Cowdell, M. B., M. R. C. S. 8vo., 210 pages!

kingdoms, and support a theory as impossible to refute as to establish !

"The best qualified observers of the phenomena of pestilential disease believe, that the morbific matter, suspended in the air, is inhaled with it by the lungs, and is thus admitted into the circulating blood. Whatever antidote can be administered to the poison so inhaled had better, therefore, be taken in the same manner. Now amongst the agents described by Professor Graham (quoted p. 194) as preventive of fermentation, and also familiarly known to prevent the growth of mould and mildew (fungi), organisms resembling those which effect fermentation, are the aromatic and essential oils. The author, therefore, proposes, that by a simple contrivance,—a kind of respirator of double wire gauze,—a porous substance of woollen texture imbued with one of the esssential oils (probably cloves will be found best), should be so placed as that the vapour should be inhaled, and thus, entering with the morbific fungous germs, will, it is hoped, effectually prevent their vegetation, and consequent morbid effects. This practice will, of course, require caution as to the quantity of essential oil employed. In addition to this, the use of aromatics—and none better than cloves—in food and beverage, should, during the prevalence of pestilence, be more than ordinarily abundant. Tonics, and especially sulphate of copper,—eminently anti-fungic, as well as an invaluable remedy in chronic diarrhœa,—may be also employed as prophylactics. Stimulants (wine or other beverage mulled) taken internally may be used with advantage by those exposed to the morbific virus ; and are especially necessary to repel the first impression made by such virus (as quoted from Dr. Copland at p. 96).

"2nd. *Curative.*—This, to be of any efficacy, must be practised while absorption of medicine from the stomach and alimentary canal can take place, which is found too often to be impracticable in the advanced stages of the disorder. We should ourselves give the sulphate of copper, with stimulants

and aromatics to make it sit on the stomach: nor should we, except in persons so robust and plethoric as to endanger their convalescence with inflammatory sequelæ, have recourse to bleeding. The use of astringents with aromatics,—by friction with essential oils in embrocations, by aromatic fumigation, after Simeon Seth, and, recently, Dr. Copland, and by aromatic inhalation as now proposed, as well as by the mouth,— is indicated. Any of the methods in use may, with apparently equal advantage, be employed in the advanced stages, and, indeed, in the early ones of severe cases. We again repeat, that the attention of medical men must be directed rather to the prevention than the cure of this pestilence, except in its mildest forms, in many cases of which probably a fatal issue would not be the result, were they left solely to nature. Prevention may, we trust, be confidently expected from an application of the means deducible from science, and which we have striven in this work to exhibit.

"*Conclusion.*—Conscious that the instruments employed in exposing to view the previously concealed agents in the production of pestilential cholera have been, from want of practice, unskilfully used, it is, nevertheless, hoped that this effort will not be totally unproductive of benefit. It would be out of place here to enter at length into speculations on the causes of other epidemics. But we may be permitted to express an opinion that many of our known epidemics have their origin in fungous vegetation; some of them, like influenza, acting immediately upon human beings,—others requiring (except in localities possessing those constituents requisite for a development *de novo* of the morbific virus, as is probably the case with cholera in India), the mediate action of the human body,—thus constituting an infectious disease. That yellow fever and other fevers of tropical countries depend, like cholera and dysentery, on the vegetation of fungous ferments, we have little doubt; while we expect it will ere long be shown that many of our eruptive diseases spring from a like origin.

Even scabies, with its *acarus*, is probably an affection produced by the development of a fungus, on which the *acarus* feeds; just as we have seen an *acarus* feeds on ergot, and, as we think it probable, that the *aphis vastator* (Smee) does on the *Botrytis infestans*,—the fungus to which the potato disease has been ascribed."

If we were to believe all we hear of the cholera, and to attach implicit credence to the various facts recorded concerning its progress, we must give up everything like an attempt to account for its propagation, and abandon ourselves to the hypothesis that the usual laws of nature have been suspended for the benefit of this scourge of mankind.

Thus in the Morning Chronicle of August 17, 1848, it is gravely stated, that "the cholera jumps over enormous spaces, and then retraces its steps, as if to repair the omission. *It runs down one bank of a river for several hundred miles, and never touches the other bank. It has dealt the same with streets.* In Paris it has happened that *all* the inmates in the upper and lower stories of a house lay dying, whilst *not a single person* in the middle stories felt ill. We have on record an instance of one side of a ship in the Madras Roads being struck by cholera, while the other side was untouched; nor did the men on the side not attacked by it afterwards suffer, although they attended upon their afflicted companions, and buried them; that is, threw them into the sea as they successively died." In proof of the authenticity of this fact, the writer quotes Mr. Chalice's pamphlet, who adopted the narrative from Colonel Rolls.

"*Quod nimium probat, nil probat*," is a most salutary rule respecting evidence, and the application of it to that before us insures its rejection. What an accurate sanitary inquisition, and how laborious and expensive an investigation, were necessary to ascertain the strange manner in which cholera was limited by the above river. Whether both banks were equally inhabited,—whether one was populous and the other a desert,—

whether the river was straight in its course or serpentine, are matters of too little importance to be mentioned; but the one needful fact is asserted with all due solemnity,—that the cholera for several hundred miles was always opposite to, but *never touched the other bank.* Observe here the peculiar force and unhesitating exactness of *never;* it is only equalled by *all* the inmates of two stories dying, and *not one* of the intermediate story being attacked! It is only exceeded *by the one side* of the Madras ship!

Mr. Chalice has the kindness to add, by way of illustration, that the cholera is considered by the native Indian doctors to arise from animal miasma, consisting of migratory insects, analogous to those known as blights. "But this theory," he continues, "has found no favour with the medical men of Europe, who, however, we rejoice to say, have at length decided, by an overwhelming weight of experience and authority, that the disease is not contagious. Science has its heroes as well as war, and its martyrs as well as religion." So far the writer in the Chronicle. Let us now see how he proves his latter assertion. What hero does he bring forward, what martyr does he exhibit for our admiration? His following sentence answers this question: "More than one French physician placed himself in direct contact with a patient in the worst stage of cholera, in order to bring the contagion question to proof." We may here discover something of the hero, but as the gentleman in question escaped unscathed, we cannot detect anything of the martyr. When such assertions as these, brought forward by the Chronicle, are gravely recorded in a leading article upon a subject of vital importance to the nation, we are almost tempted to hope that the writer was not an Irishman. But this writer, after all, to whatever nation he belongs, concludes the article in question with some more sensible remarks: "Mr. Chalice," he says, "the author of the pamphlet entitled 'Should the Cholera come, what ought to be done?' gives the following advice on diet: 'Good wholesome fresh beef and

mutton, with the best wheaten-bread, and a glass or two of good old port to those who have it or can get it, is what we recommend: at the same time we do not object to the occasional substitution of a roasted fowl or partridge.'" So far Mr. Chalice, as quoted by the writer of the Chronicle, who adds: "We see no objection to this advice, except that alleged, against advice of the same sort, by Mons. Louis Blanc,—'That it was a farce and a mockery as regards the lower classes.'" I may remark that the metropolitan papers, one and all, gave a very prominent place to somewhat similar advice which emanated from a still greater authority, viz., Mr. Wakley, the member for Finsbury, and coroner for London, who, on the occasion of an inquest held on the body of a person who died of English cholera, warned the public not to allow the Asiatic cholera to surprise any individual with an empty stomach, as each unhappy wight in such unwholesome predicament would become its instant prey. "A full stomach," says Mr. Wakley, "and plenty of capsicum, are the best defences against cholera." So that John Bull, evidently, no matter whether he has to fight a human, intelligible foe, or has to contend against an unseen and mysterious enemy, still relies on the national advantage of a full stomach. I have no objection to this mode of self-defence, although I foresee some difficulty in maintaining the stomach in the constant necessary state of repletion; but I must protest against the capsicum, which, being a powerful stimulant, will, if it be used to excess (as Mr. Wakley's recommendation is very likely to induce ignorant persons to do), inevitably produce a tendency of blood to, and a congestion of the mucous membrane of the alimentary canal, that may facilitate the inroad of the very disease it is meant to defend it against.

It is scarcely necessary to record the strange phenomena witnessed by some of the British consuls, quoted by Lord Morpeth in his speech in the House of Commons; nor is it requisite to refute the connexion which one of these officials

supposes to exist between the appearance of hosts of caterpillars and the advent of the disease. Another dwelt upon the unusual heat of the weather; but this gentleman was evidently unaware that the disease had deliberately marched over the highest passes of the mountains in Hindostan, attacking travellers amidst the snows, and devastating villages at the greatest altitude, perhaps, that man inhabits, in the Bameean pass, between Caubul and Bokhara. Some, too, have chronicled most portentous and nauseous-smelling fogs, which have wrapped up the whole surface of the fated country as in a winding-sheet. But enough of these absurdities. Mankind, when alarmed, become credulous, and times of danger are always times of superstition. Reason ceases to reign when the fears or passions of men are excited. In connexion with the influence which poverty and the condensation of wretchedness have in producing disease, I may remark, that, however effectual such causes may be in giving rise to certain classes of fever, gangrene, erysipelas, or dysentery, yet they can never originate specific diseases. No matter how crowded people may be together,—no matter how wretched their condition,—no matter how bad the ventilation, even though it approached to that of the Black Hole of Calcutta,—still the combination of all these malign influences is incapable of giving rise to either measles, scarlatina, small-pox, hooping-cough, and, I will add, cholera. Had they been capable of producing cholera it would not have been of such recent date among us.

I cannot give my assent to the benefits that are supposed to accrue from opening the sewers and white-washing the houses in the poorer parts of cities. It is true that obstructed sewers give rise to disgusting nuisances, and soiled exteriors are offensive to the eye. But the causes of epidemic disease escape the scrutiny of both nostrils and vision, as is proved by the fact that the worst parts of most capitals of Europe, however abounding in all sorts of abominations, do not give rise to either typhus fever, or plague, or cholera. Filth is the outward

and visible sign of poverty, and, like poverty, is itself an evil; it oftener accompanies than causes disease; otherwise, as I have said, every capital in Europe would contain within its precincts many self-supporting manufactories of pestilence. I have been always of opinion that poverty is more injurious to health than dirt; that its prevalence entails disease—sporadic diseases —from many obvious causes, and increases the spread of contagious disease on account of the *entassement* or crowded state in which the poor necessarily live. If humanity strives, therefore, in its visits to the haunts of misery to prevent the spread of contagion, it must pluck the inmates from within those bounds, disseminate them over a larger space, where the same number that now inhabits rooms may occupy large houses, and may have the use of nutritious food. But, alas! this, the only true method of relief, will require something more expensive than the broom and brush; and those who are so loud in recommending open sewers and white-washes as sovereign prophylactics, will, perhaps, shrink from contributing their share of that poor rate, or money for relief, which alone can snatch the pauper population from the hands of the destroyer.

The observations of Dr. Cane on this subject are so much to the purpose that I cannot do better than quote them:

"Now, not only should arrangements be made for adequate hospital care, and for extern visiting and prescribing in every locality, and made at once, but all those other measures should be at the same time looked after which tend to improve the condition of the poor. Officers of health should be empowered, as are market-jurors, to look after the character of the food of the people, to deal summarily with all venders of foul meat, and damaged food of every description. As example: unsound herrings, or other fish in a state of decomposition, articles of food exceedingly frequent in the inland parts of Ireland; the meat of animals, not slaughtered, but that have died of disease, commonly sold in Irish markets; unsound pork, or pork whose hair has been imperfectly removed—[The poor

always eat pork and bacon skin; I have seen such pork-skin prove the exciting cause, by producing mechanical irritation along the mucous membrane, its strong and bristly hair being brush-like. I remember it in one well-marked case of cholera; more recently I have seen the same cause produce ordinary vomiting and purging. Had cholera been here I have no doubt those cases would have been developed as cholera]; vegetables, when eaten in large quantity, or when stale, or when of a harsh description that will not boil softly, a state in which cabbage and greens are frequently eaten by humble people; cabbage stewed with fat, and all such greasy messes; all unripe fruits, sour milk when taken with oaten stirabout, flummery, porridge, or bad wet potatoes, are all liable to produce lax bowels, and therefore tend to the development of cholera in the individual, if exposed at all to its influence while the bowels are lax. Indian meal, which is now an article of common consumption in Ireland, has a decided tendency to cause loose bowels, if not judiciously dressed by suitable steeping and long boiling. Soup diets and all such fluid messes are also likely to create loose alvine discharges. Water should be especially looked after, to see that every locality was supplied by water that was of a pure and wholesome character: in a word, to see that no food, solid or fluid, no drink or water, was used by the people, the tendency of which, even though faultless in all other respects, was to create laxity of bowels.

"Next to the food comes the state of the sleeping apartments, bed and bedding, and clothing of the people. Wherever they are lying (as they are in many places) upon a thin layer of straw, directly upon a damp earthen floor, or with the rain dripping in misty moisture from the old and worn thatch,—where their bed-clothes, or day-clothing, are so meagre and scanty as to expose them to the risk of sudden arrests of warmth of surface and natural perspiration,—these are so many invitations for cholera to come and take its victims. Therefore, officers of health should at once have power and means, and be busily

looking after all these things; their efforts will come too late if they wait till the disease is on our shores. Clean straw, boards for bedsteads (though they were but planks laid on stones), blankets, and clothes, should be prepared for those in need of them. It will be money better spent than at a later period, to waste it in coffins and grave-yards. Everywhere it should be supplied by the authorities, and from the benevolence of the wealthy.

"In addition to food, clothes, bedding, and housing, the state of the people's minds is of great importance. They ought to be kept cheerful and free from alarm; everything calculated to depress mental energy predisposes to cholera,—the fear of cholera itself remarkably so; therefore in all classes of society, all ordinary and rational amusements should be encouraged. The spirit, as well as the body should be maintained, and thus will much of the evils of that fearful pest be avoided."

The present is a particularly dangerous time to overlook the contagious nature of cholera; for the unfortunate likelihood of a dearth of food will render it necessary to provide means to assist in feeding the people, and if the same methods are employed as in the years 1846 and 1847, great numbers of the indigent and starving poor will be daily brought together for the purpose of being fed, and thus people in multitudes will be assembled, and to a certainty the contagion of the cholera will be disseminated far and near. In fact the same reasons that caused typhus fever to spread, and commit such dreadful ravages in 1846 and 1847 will produce a like effect with regard to cholera. In the above-mentioned years of public calamity, fever so fast followed on the footsteps of famine, that some persons thought the former was the natural consequence of the latter; whereas the unusual prevalence of fever in those years arose, not directly from the want of food, but indirectly, from the opportunity the contagion had of affecting persons brought together to partake of the measures of relief; and it is much to be apprehended that the same

connexion will be observed soon between famine and cholera as then existed between famine and fever. In truth, wherever large numbers of starving persons are collected to receive food, it is a mere matter of accident what contagious disease may become prevalent amongst them. It may be fever,—it may be plague,—it may be cholera,—it may be small-pox, if the nation consists chiefly of persons unprotected by vaccination, as occurred in the lamentable famine at Gujerat in 1812, when the small-pox broke out in the midst of the multitudes assembled for the purpose of receiving rice, and in a few months very nearly depopulated the country.

It is strange what a general disinclination has existed for some time in Great Britain to allow that diseases are contagious. The influence of capital has, for obvious reasons, been brought to play, and every expedient has been resorted to,—no matter at what danger to the public health,—to try to diminish the stringency of the quarantine laws, and thus remove the obstacles to trade. In furtherance of this object advocates have been found who did not scruple to advance opinions quite opposed to those hitherto received, and many treatises and books have been published to disprove the existence of contagion even in the case of plague. As to typhus fever, its non-contagious nature was by such persons supposed to be demonstrated, and the great majority of the physicians of England were non-contagionists. The Irish physicians, however, never supported this view of the subject, for, unfortunately, they had before their eyes daily proofs of the contagious nature of typhus. The events of last year have shown that the opinions of my Irish brethren were correct, and no one is now found who denies the contagious nature of typhus, for all have been taught by its transmission to America and Canada, that it is a portable disease, capable of being propagated by infection. Yellow fever affords another example in which the opinions of our predecessors were supposed to have been overturned by the investigations of modern observers; and almost all Euro-

pean and American physicians were united in believing that it was not a contagious disease, although the contrary had been maintained by the most eminent men of the last century. Doctor Stokes and I had an ample opportunity of observing a variety of typhus in 1826, which, in its symptoms and pathology, so manifestly agreed with yellow fever, that we could not entertain any doubts as to their identity. We were convinced, also, that the opinion of those who maintain that yellow fever is never contagious must be incorrect.

The circumstances which attended the breaking out of fever in the Eclair, and its importation, by means of that vessel, into the island of Bòa Vista, were so strongly indicative of its infectious character, that the latter is now generally allowed; and thus yellow fever is by this single instance taken out of the category of non-contagious diseases. I must refer the reader for an excellent article on this subject to the July number of the British and Foreign Medico-Chirurgical Review, where he will find an admirable analysis of all the facts that are detailed in the Reports of Dr. King and Dr. M'William on the circumstances attending the appearance of the fever at Bòa Vista.

The article in question is extremely able, and at its commencement the reviewer states that Dr. King's opinions respecting the contagion of yellow fever seemed to have been fully formed before he landed at Bòa Vista. He was, and is a decided non-contagionist, and believes that he has succeeded in throwing doubts on the fact of the importation of yellow fever into Bòa Vista, by the crew of the Eclair; and yet the reviewer relying altogether on the testimony of Dr. King, a non-contagionist, succeeds in proving incontrovertibly from Dr. King's facts, that the disease was imported by the crew of the Eclair. I look on it as of great importance that this review has arrived at such a result, because in the previous part of the same number it has given an able article "on the causes and diffusion of cholera," and has supported the conclusion

that cholera is not contagious. I take the liberty of submitting the following facts to the consideration of the reviewer, and only entreat him to use the same tests and the same method of reasoning that he has so successfully applied in the analysis of Dr. King's book, and I have no doubt he will see reason to change his opinion, for the example of the contagiousness of cholera I am now about to bring forward, is very similar in the circumstances which attended it, to those that followed the arrival of the Eclair at Bòa Vista. In truth, the coincidence between the two cases is very remarkable. There is this difference, however, that the evidence of the importation of cholera is, if possible, much stronger than that of the importation of yellow fever. The particulars of this case are given in the thirteenth volume of the American Journal of the Medical Sciences, p. 359, "On the Communicability of Cholera, by Professor S. Henry Dickson, M. D."

"On the 31st of October, 1832, the brig Amelia, bound to New Orleans, after a tedious and stormy passage from New York, having sailed on the 19th of the same month, was wrecked on the beach of a low and sandy island, about twenty miles from Charleston, far out to seaward, and offering a very scanty vegetation. It is regarded by its owner, Mr. Milne, as quite a healthy spot, and resorted to by him as an agreeable summer retreat, four of his negroes being left upon it as permanent occupiers. The brig had on board, besides her ordinary crew, 105 passengers, 102 *of whom were crowded into the steerage. During the voyage, which was wet and tempestuous, they were much confined below*, and when six days out became sickly. Twenty-four died of cholera on the way, and several were ill when she was stranded. The survivors were treated with the greatest humanity by the owner of the island, and took refuge in his buildings. The captain and one of the passengers came up to Charleston with Mr. M., and reported the affair to the municipal authorities, who promptly entered upon the measures dictated by a correct and liberal policy.

The deputy port-physician, Dr. Elfe, visited the island, and announced the nature of the disease existing there. A boat's crew of wreckers, who had gone down to the spot(*a*) *to pursue their usual avocation of saving the vessel and cargo,* having returned to the city, one of them was seized with cholera, and died in Elliott-street, under the care of Dr. Schmidt. His was the only case which I myself had an opportunity of seeing, and it appeared to me well marked, and clearly identical with descriptions now familiar to every one. The rest of the crew were ordered to the island to perform quarantine, and having embarked, two fell sick, and one died of cholera on the passage down.

"Two physicians, Drs. Jewey and Pritchard, were, in the meanwhile, sent thither to afford the requisite medical attendance upon the sick; everything necessary for their support and comfort being forthwith furnished as far as was in the power of our intendant and council, to whom all praise is due for their conduct on this occasion. As neither the brig's crew and passengers, nor the wreckers, an additional number of whom had now gathered about the wreck under permission of the authorities, were willing to remain on the island under quarantine restrictions, eighteen men from the city guard under the command of a lieutenant, were detained to perform the duty of a *cordon sanitaire* in confining them there. These men were stationed between 100 and 200 yards from the sick, but in going to and from the landing they were forced to pass much nearer the building of one of the kitchens, which was used as an hospital; nor was it possible to prevent them from communicating with the passengers who were dispersed over the island. After the lapse of a week, Dr. Hunt went down to relieve Drs. Pritchard and Jewey, who were worn out with continual and severe exertions. A reverend clergyman of the Catholic church, Mr. Byrne, with the zeal and devotion of his

(*a*) The avocation of an American is evidently *antipodal* to that of an English *wrecker*.

sacred calling, also visited the island, and remained to dispense the consolations of religion to the sick and dying.

"Now, let us see what was the result of this intercourse of a number of sound and healthy individuals with this infected vessel, and her diseased passengers and crew. Out of about 150 persons collected on the island, twenty-three died, of whom twelve were passengers landed from the brig. Of the *wreckers*, the first to visit the vessel, and the most continually employed about her, some were almost immediately taken ill after their exposure; one died in town, one on the way to quarantine, and in all *eight*. Of the *four* negroes on the island, *three* died, one child and two adults. Of the guard employed on duty there, every man was affected more or less with the symptoms of cholera, with the exception of the commanding officer; nine were reported as attacked seriously, and *one* died; who, as Lieutenant Knights assures me, had never boarded the brig. Of the three physicians employed, Drs. Jewey and Pritchard escaped all suffering, but that of extreme fatigue. Dr. Hunt reports himself on the 17th November, as attacked by cholera, but quickly recovered. I cannot help expressing here my sense of the merits of these medical gentlemen, whose humanity and ardour led them to renounce the comforts and enjoyments of home, for an imprisonment on a dismal sand-bank, exposed to much privation, and to special hazard of sickness. Their conduct does honour to their profession, and to human nature. Lastly, the nurse who accompanied Dr. Hunt was taken ill and died. This man had been employed a week previous by Dr. Schmidt as a nurse to the only person who had the disease in the city. He had been assiduous in his attendance, and almost constantly engaged in the application of frictions until the patient died. Thus, there were *thirteen* deaths among the few who visited the island and the wreck. Such as I have above stated are the simple facts; what are the reasonings and inferences fairly to be founded on them? I pass by all discussion of the *negative* circumstances of this re-

markable case, as irrelevant to the question before us. The city of Charleston escaped without suffering the invasion of cholera, although the captain of the brig and a passenger came up to town and communicated with the authorities; although the deputy port-physician returned home, after visiting, examining, and prescribing for the patients; although the crew of a wrecking boat violated the laws, and returned also for a short time to their homes, after boarding the stranded brig; although one of their number died in a very thickly-built part of the town; and although two or three of the individuals quarantined on Folly Island escaped to the mainland. I have no wish to subtract from the real weight and value of these circumstances. I rejoice to be led to the conclusion at which they clearly point, that like all other communicable diseases, cholera requires the concurrence of certain contingencies in order to give efficiency to its generating or exciting cause.

"Nothing is better understood than that some undefined condition is requisite to the transmission of every malady, whether regarded as contagious or infectious. The most universal of all epidemics, even influenza itself, does not affect every individual within the sphere of its prevalence. Small-pox is not always taken by the exposed subject; nay, inoculation often fails, however carefully performed, and with the most virulent matter: and I appeal to every physician of reading and experience, if numerous instances of a similar nature have not come under his immediate cognizance. Thus, the man who died in Elliot-street, though visited by numbers during his short illness of a few hours, was happily a cause of disease to no one; nor did those who evaded the imprisonment of quarantine spread it in any direction. We are entirely ignorant of the concurrent conditions essential to the transmission of cholera, if it be transmissible; we know that they are not fulfilled in the above cases. The positive facts, however, I repeat, are worthy of the most serious consideration on the part of all who are anxious to arrive at the truth. Cholera

was unknown on our shores until the date of the unfortunate wreck of the brig Amelia on the beach of Folly Island. No local cause capable of originating such a disease is imagined to have existed on that island. Cholera prevailed at New York when the brig sailed from that port; the week before her departure fourteen deaths are recorded in the bill of mortality. Twenty-four of the passengers died of it on the voyage, and several were landed labouring under it. The first boat's crew of wreckers who boarded her were some of them attacked with the same pestilence which had prevailed at New York when she sailed, and of which her passengers had been ill and died. None of the other inhabitants of Charleston were seized in the same way, either at that time or afterwards: the conclusion is therefore irresistible, they received the infection from on board the brig. The doctrine is now established beyond a reasonable doubt, that cholera is importable."

Professor Dickson's account of the wreck of the Amelia exhibits the strongest evidence of truthfulness and candour, and its authenticity and correctness have been testified by various witnesses. The Professor deserves much credit for not hesitating to state some facts which apparently militate against his conclusion. Nothing that I can say is capable of adding weight to the arguments of Dr. Dickson, except my informing the reader that in 1832, the date of the transaction, the city of New York contained 220,000 inhabitants, and the deaths from cholera during the week previous to the sailing of the Amelia, amounted to fourteen. Let the reader apply the doctrine of chances (as explained by Professor Alison in a quotation from a treatise of Dr. Simpson's, in the preceding part of this sketch(*a*)), to this mortality, compared with that which occurred on board the ill-fated brig during the six days preceding her wreck, and which amounted to

(*a*) Old Series, vol. xvi. p. 379. See also this method of argument as originally applied by the late eminent and excellent Dr. Whitley Stokes, to prove the contagiousness of typhus fever.

twenty-four deaths out of 102 passengers crowded together, and placed under circumstances most favourable to the propagation of disease by means of infection. Let this calculation be fairly made, and the result will amount to a demonstration that cholera is contagious. Let the voyage of the Amelia be likewise compared with the sad registers of the mortality which fever caused in emigrant vessels from Ireland last summer, and in which typhus broke out among the passengers some days after they had sailed, and the similarity of the attending circumstances will be found so striking, that we cannot refuse to allow an identity of causes when all the effects are the same. With respect to the Irish ships, that cause is now universally admitted to have been contagion; and that same cause it was which produced the disastrous spread of cholera in the American brig.

Art. VII.—*Observations on the Fever of the Western Coast of Africa.* By Thomas Kehoe, M. D., Assistant Staff-Surgeon, &c.

As it must be admitted that the fearful mortality among European settlers has prevented our opening up and exploring the whole of Western Africa, it becomes desirable that the experience of every medical man who has been in Africa should be recorded, so that from united observations it may be ascertained whether African fever essentially differs from that which prevails in these countries,—a disease under different laws, and requiring a different treatment; or whether, though the type varies from any of our recognised forms, there is in reality no essential difference, so that the experience of Europe may be brought to bear on the treatment of African fever(*a*).

(*a*) It is curious how little is known respecting the west coast of Africa, considering that it lies within sixteen days' steam-voyage of England; although

For myself I believe that tropical fevers do not differ essentially from those of temperate climates; and that, in a modified form, the same rules of practice will be found to apply as to similar symptoms occurring in the fevers of Europe. Though I do not pretend to have established a decidedly rational mode of treatment, yet I am convinced that the African fevers and those of Europe are essentially the same; and that the symptoms which in Europe require treatment most carefully diversified, according to the constitution, the type of the prevailing epidemic, &c., do not in Africa require the one unvarying mode of treatment—the exhibition of mercury so as to produce salivation.

I do not mean to assert that the treatment of fever by the indiscriminate exhibition of mercury has been universal on the coast of Africa; many medical men have not adopted it; but it certainly has been the general method. Nor has this supposed necessity for mercury been confined to fever; in many other diseases it is given in large quantities, when it either would not be given at all in Europe, or exhibited with great precaution, and in much smaller doses. In venereal, for instance, I was assured I should find it absolutely required in every case;

the country produces in unlimited quantities the most valuable tropical productions; and the people, though we call them savages, are sufficiently civilized to be anxious to trade with us, and obtain our manufactures, and have articles of primary importance to us, in unlimited quantities, to give us in exchange. The value of our imports from the west coast of Africa is now nearly a million and a half, and if the country were opened up to British enterprise, there really appears to be no limit to the trade which must result. While I believe it is to commerce we must ultimately look for the civilization of the African, it appears to be utterly utopian and absurd to expect to introduce generally throughout Africa any portion of our civilization, from our present settlements on the coast. It is questionable if one country ever adopts the civilization of another, or if civilization ever can be of foreign growth; but if, by means of commerce, we give a people new ideas, and the perception of new wants, and stimulate them to gratify those wants by their own industrial efforts, we may hope that they will gradually civilize themselves.

yet I employed it in precisely the same manner as I would have done in Europe. In affections of the liver, spleen, &c., the same observation applies; and I believe that, though the constitution or the disease may be modified by climate, there is no essential alteration produced in their nature by it.

To enable us to understand Sierra Leone fever better, let us for a moment consider the character of the country. It lies in 8° 29′ north latitude, 13° 14′ west longitude. As it is approached from the sea it realizes all that we could have imagined of tropical scenery; even the famed Blue Mountains of Jamaica are not so lovely as Sierra Leone. The town lies in an amphitheatre, surrounded by mountains gradually rising in the back ground to the height of 4000 feet, and clothed with all the vegetable profusion of the tropics. The hill on which the barracks and some other public buildings are situated is barren, and almost red from ferruginous matter; but it only serves to set off the deep verdure of the back ground. To the extremity of our settlement, about forty miles down the coast, where it gets more tame and level, the scenery is the same: mountain rising over mountain; trees with foliage of every hue; at every few miles reaches of silver sand, with the magnificent silk-cotton trees towering round them; or little bays, whose singular beauty is strangely opposite to the remembrances their names call up,—Dead Man's Bay, Pirate's Bay, &c.

But the position of Sierra Leone makes it peculiarly unhealthy, even beyond most other spots on the coast. A tropical sun draws up a vast body of water from the sea: the mountains which surround the town prevent the free current of air; so that the damp, heavy atmosphere remains lodged over the settlement. The air, already saturated with water, cannot carry off the moisture from the body, and thus the European is bathed in perspiration on the least exertion. Even in the dry season all steel instruments are at once rusted, and articles of clothing, if not worn, become mouldy in a few

days. In walking to the barracks from town, even in the middle of the night, perspiration used to stream from us like water. In fact, with this state of the atmosphere, a vertical sun, and the thermometer at 84° in the shade, the European inhabitants are, as it were, in a continual vapour-bath.

One effect of the climate is to produce great excitability of the nervous system. Of this nearly all are conscious in their own persons; the temper becomes irritable, and a languid, yet excitable state is commonly produced.

Four varieties of fever seem to prevail on the coast of Africa:—

1. Common intermittent.

2. Irregular intermittent, or "fever and ague,"—the mild bilious remittent, or common remittent of the country; for it is known by all these names.

3. "The seasoning fever," or severe bilious remittent, which attacks nearly all persons from temperate climates in their first or second year of residence, not one in a hundred escaping.

4. The epidemic fever, which fortunately rages only at intervals of some years, and which appears to be a variety of yellow fever. This I have not seen.

The intermittent differs from the ague of other countries, chiefly in the stages not being so well marked. In many instances a person will go about without having any regular fit of ague, but with merely a sense of chilliness or discomfort, or a creeping sensation down the spine, which, in some instances, is so severe, that the patient feels his spine like a bar of ice. This, in a severe form, seems to constitute the fever and ague, or common fever of the country, to which natives or old residents, or persons coming from other tropical countries, are liable. Nor is it easy to draw any line of essential distinction between this and the seasoning or severe bilious remittent which attacks natives of temperate climates, but from which they suffer only once; while the epidemic appears to be but the aggravated or malignant type of the latter.

It is, however, certain that a person is seldom, if ever, attacked a second time with the seasoning fever, while he is not only liable to repeated attacks of intermittent, but when the epidemic prevails he is liable to be attacked with it even while recovering from the seasoning fever. This would lead us to suppose that there was something essentially peculiar in the seasoning or severe bilious remittent; but when we come to compare its symptoms with those of other forms, we find it difficult to point out any positive difference.

The symptoms of the "fever and ague," or irregular intermittent, are frequently as severe, if not more so, at the commencement of the attack, as those of the seasoning fever. But while the seasoning fever runs a course of from five to fourteen days, too frequently with a fatal termination, the fever and ague, no matter how severe the symptoms may be at first, is amenable to treatment, and the course of morbid action is easily broken through. I have not allowed any case to run its course uninterrupted, but from what I could ascertain from the native nurses and others, the fever will generally terminate on the third day. But unless the system be strengthened against the morbid aguish impression, the patient will be subject to frequent attacks, varying in every degree of intensity, but gradually weakening the system, and laying the foundation for visceral disease. A tendency to morbid action is established, which is often with great difficulty broken through, and in many cases renders a return to a temperate climate necessary. The native mulattos suffer severely, and the size to which their spleens are enlarged is often enormous; I do not remember seeing a single mulatto child who had not an enlarged spleen.

I believe it will be found that intermittent fever, in its regular types, is a comparatively rare disease in Africa; but that every shade of fever, from the slightest to the most severe, assumes an intermittent or remittent character, and that the morbid impression is markedly on the nervous system.

Inflammatory or typhus fever is comparatively rare, though, of course, local inflammations and typhoid symptoms occasionally occur.

It appears to me, though I do not consider the fact established, that persons who have had fevers in other tropical countries are only attacked with the milder variety of African fever. Our military force at Sierra Leone consists of about 200 black troops, officered by Europeans. The officers are changed every year; and I believe that, with very few exceptions, they have been previously in the West Indies; they are also favourably circumstanced as to barracks, &c., at Sierra Leone. Though many are attacked with fever, and they have not unfrequently to be invalided, the mortality among them is very trifling. The medical officers, and those of the civil service, who go out from England, not having been previously in a tropical country, suffer in a much greater proportion. Among the persons I attended at Sierra Leone there were natives of the West Indies, and though the cases set in with symptoms sufficiently severe, they proved to be merely the so-called fever and ague, or common fever of the country. The first case I will narrate was that of a young woman, a mulatto.

——, æt. 22, of rather delicate habit; about a fortnight in Sierra Leone, from the West Indies, *via* England. She was attacked with nausea, intense headach, pains in the limbs, and shivering, quickly followed by intense heat of skin; her eyes were injected; her countenance looked puffed and swollen; her tongue flabby and white; pulse 104. She first complained early in the morning, having been in the night slightly delirious. I saw her on the following morning, and so much was her countenance swollen and altered, that I supposed her to be a person of at least forty years of age. The skin was intensely hot, the pulse rather weak, and the nausea still continued. She immediately took an emetic, and the body was kept constantly sponged with lime-juice and water.

Now here was an attack setting in with considerable violence; yet the emetic and the cold sponging were alone sufficient to arrest the course of morbid action. In the evening she was much better, but there was still some heat of skin, an uneasy sensation in the spine, and considerable nervousness. She took a pill composed of a grain and a half of opium and four grains of calomel at night, and a mild aperient in the morning, and required afterwards but a little quina to establish convalescence. She, however, resided in a marshy situation, and frequently had similar attacks of a more or less severe character. Had those symptoms been the commencement of an attack of seasoning fever, the course would have been very different; yet it would be difficult to say in what they differed from those of the severe bilious remittent, except that the cold stage was more marked, and the symptoms, perhaps, more intense than they usually are at the commencement of fever of the more severe grade.

Two other cases of a similar character occurred in officers, born in the West Indies, of European parents. On coming to Sierra Leone they had exposed themselves to sun and rain at all hours of the day, without the slightest precaution. They were both attacked with fever: the symptoms were very threatening at first, but yielded without trouble. One who resided at Tower Hill, in an elevated position, had no return of the attack. The other, who resided in a low and marshy situation, had frequent attacks, some of them exceedingly severe. In these cases the heat of skin was so intense, having continued in one instance for thirty-six and in another for forty hours before I saw the patient, that I considered it advisable to use the cold affusion, and then to promote perspiration by bed-clothes, warm drinks, and the use of quina and opium. Full perspiration was quickly brought on, with complete relief, though previously to the cold affusion all endeavours to produce it had failed. To the use of the combination of quina and opium, and the circumstances under which it

may be given with safety, I shall again refer. I believe that in certain stages of African fever, after vascular excitement has been in some measure subdued, and in those cases which are uncomplicated with local inflammations, it will be found to fulfil the indications for treatment better than any other means which can be adopted.

I shall next consider the seasoning, or severe bilious remittent,—"the African fever." It is this which is endemic on the coast, which has principally caused the fearful mortality that has always prevailed, and made the western coast of Africa proverbial for its fatality. Medical men, who have had the opportunity of observing it, appear to be as undecided about its nature at the present day as they were at first. Is it an inflammatory fever? Is it an adynamic or ataxic fever? Dr. Copeland tells us: "The inflammatory remittent, the bilious inflammatory, the adynamic or malignant remittent, and the ardent, or seasoning fevers of Europeans lately arrived in warm climates, are merely modifications of each other, and differ essentially from epidemic yellow fever, with which, however, they have been all most singularly confounded." In conformity with these views he directs that we should bleed when vascular excitement is established, and repeat the bleeding if it be not subdued by the first venesection.

Mr. Boyle, who, as Colonial Surgeon at Sierra Leone, had more extensive opportunities of observing the disease than any other person, tells us: "In its character it much resembles that of the bilious remittent of the East and West Indies, which I have been accustomed to see; but in the treatment the following contrary results are observed, namely:—first, that on the coast of Africa patients do not bear the loss of that quantity of blood, which, by proper after-management, acts almost as a specific in the former countries; secondly, that the early appearance of convalescence is an infinitely less favourable criterion on the coast of Africa than it is elsewhere; and thirdly and lastly, that the degree of debility attendant on

patients recovering from this fever is decidedly greater than it is in other tropical countries." That patients do not bear loss of blood in "African fever" is now almost universally admitted. Boyle tells us: "Among a great many fever cases under my care were seven of the crew of the Thomas Gelston. I blooded six, in whom the febrile symptoms were most marked. In the end the whole seven died, but the most delicate, the one not blooded, outlived the strongest of the others for the space of about twenty-four hours." "In another instance, thirty-five men of His Majesty's Ship Plumper were sent to hospital; twenty-nine are now dead, two in danger, and four in a state of extreme debility."

Such instances,—and I believe the experience of every one who has treated fever on the coast of Africa can bring forward similar examples,—seem to decide the question of bleeding, and to establish that, on the coast of Africa at least, the seasoning fever of Europeans is not an inflammatory fever, and will not bear active antiphlogistic treatment. Boyle endeavours to establish a difference between what he terms climatorial fever and local remittent fever,—that the former will bear bleeding, but the latter will not. The persons affected with climatorial fever he considers to be principally the seamen in our ships of war on the coast, who have not been exposed to local influences; but he admits that even these do not bear bleeding well, while persons attacked with the disease on shore could not bear it at all. "Patients who could bear the loss of fifty or sixty ounces from the arm with the greatest advantage in the East and West Indies and Mediterranean, at one blood-letting, would faint on losing from twenty to thirty ounces on the west coast of Africa." He therefore admits that, even in the "climatorial fever," blood-letting should be used with caution. It may be at once admitted that the loss of from twenty to thirty ounces did less mischief than the loss of from fifty to sixty ounces. I quote Boyle, because he had the opportunity of observing the season-

ing fevers of various parts of the world, and therefore is not liable to the objection which applies to Dr. Copeland,—of drawing general rules from merely local experience, and who was, moreover, at first prejudiced in favour of bleeding.

It seems, therefore, that there is no essential difference between the two forms of fever Boyle seeks to establish. That seamen on board the ships of war, who are least exposed to the coast influences, and, therefore, we may suppose, get a "smaller dose" of the paludal poison, have their vital powers less prostrated, and are able to bear up against a more active treatment than those who contract the disease on shore, is sufficiently probable.

The mortality among seamen on board merchant vessels, exposed, at the mouths of the rivers, to the full power of all deleterious influences, is frightful: whole crews are, in some instances, swept off; vessels are abandoned, or with but one-third or one-fourth of their men, are at length, with the assistance of the natives, brought into some port. Yet if a mercurial treatment be the treatment for African fever, few ought to be lost, for a tea-spoonful of calomel given by the captain, and repeated, at his good pleasure, till the patient be better, or—which is the more common result—dead, is the usual treatment. An absence of all treatment, however, is not found to have more satisfactory results, and so sailors in despair have recourse to the calomel.

Yet it must be admitted that the opinion of almost all practitioners on the coast is in favour of mercury; and when we find their opinions agreeing with those of Chisholm, Denmark, Johnson, &c., the evidence in its favour certainly becomes very strong. But we must also remember that it is not so long since fever in Ireland was treated by full venesection; that mercury, pushed to salivation, was also constantly considered necessary; while another class of practitioners, another school, utterly disregarded all vascular excitement, and poured in their wine, bark, &c., from the very first. Now,

a change having taken place in the opinions of medical men in this country as to the treatment of fever, it is not improbable that a similar change may take place in medical opinion as to tropical fever; and that the symptoms of each case will be considered, and not any supposed special condition of the system, as indicating the general employment of some one heroic remedy.

Dr. Copeland doubts the generally beneficial influence of mercury, except in the epidemic yellow fever. But it is in this that Rush is so convinced of its efficacy; and as mercury got a full trial in the hands of the skippers, so blood-letting certainly did in his. The amount of blood-letting in his cases appears awful in these modern times, and yet it is not so long since 1794. "John Madge bled twelve times to 150 ounces; Mrs. Rapper, eleven times, to 140 ounces; the Rev. Dr. Magan's maid, ten bleedings to 100 ounces; Mrs. Fius, fifteen bleedings to 150 ounces. Mrs. Gavin objected to a fifth bleeding, and died for the want of it. Her death was ascribed to the frequency of the bleedings by the enemies of the depletion system. Mr. Marr died after six bleedings; he might have been saved, humanly speaking, by one more. Mr. Montford, of the State of Georgia, was cured by plentiful bleeding and purging, but died in a fainty fit."

The list of the advocates for mercury is unquestionably a very large and respectable one; but, independently of the fearful mortality which follows its employment, there is a large amount of evidence against it. When our troops re-embarked after the capture of Batavia, Mr. Wade gave from twenty-four to thirty-six grains of calomel in the twenty-four hours, till salivation ensued. Some remission then followed; but no sooner did the gums heal than the patients died, almost to a man.

Dr. Daniel gives a case of a patient labouring under profuse salivation being seized with remittent fever when the salivation subsided. The fever terminated in eight or nine days, and the salivation returned in all its force, with mercurial fetor,

swelled salivary glands, tongue, &c., though no mercury had been given after the accession of the fever. He is of opinion, therefore, that mercury given to produce salivation in fever inflicts a real injury on the patient, for, as long as the febrile action is violent, the mercurial action does not take place, and it keeps the patient low and weak after the fever has subsided.

Let us now consider what are the symptoms of the fever which has produced such fearful mortality; and first, the appearances which are observed on *post mortem* examinations. *The substance of the heart is frequently flaccid, soft, and easily torn.* The changes within the cranium consist chiefly of congestion of the veins of the pia mater and sinuses, with a fluid dark blood, and sometimes of effusion into the ventricles and between the membranes. The liver is often softened and congested; the spleen, in some instances, like a mass of dark blood. Inflammatory patches in the stomach and duodenum are not very unusual. I have examined the record of a vast number of cases; in the far greater number the *post mortem* appearances bore no relation to the symptoms during life. In many no morbid appearances whatever were to be discovered. Dr. Robertson gives, amongst others, the case of a man named Collins, first attacked on the 15th instant; he had intense heat of skin and delirium; the pulse became small; on the 18th convulsions supervened, and carried him off. The sectio cadaveris showed not the slightest deviation from a normal state in any of the viscera. In certain cases, however, acute inflammation of the membranes of the brain has been found after death. It would certainly seem that a treatment must be required in these, different from that in cases marked merely by a prostration of the vital powers, and that the antiphlogistic treatment and mercury, useless, or worse, in the latter, would here be required. Again, in those cases in which inflammation of the mucous membrane of the stomach and duodenum is found, it is difficult to understand how general depletion or mercury can have a certain effect, but very

easy to understand how wine and bark, given with the object of supporting the strength or combating the remittent action, may do vast mischief.

It is to be remembered, however, that in the far greater number of cases no organic lesion is found after death.

In what then does Sierra Leone fever differ from the fever of the British islands? The duration of both is about the same; there is no inflammation or lesion of any organ necessarily present or characteristic of either; in both there is a tendency in particular organs to take on inflammatory action; and there is in both a something essential. In this country the lungs are often engaged; in Africa the liver. But that is only what might *a priori* be expected. We know that the lungs perform comparatively little duty in tropical countries; the liver, vicariously employed in getting rid of part of their carbon, suffers for its double work. The heat of skin, moreover, is generally much more intense than it ever is in this country; and those who look on fever as essentially an inflammation of the skin might here find a corroboration of their views. But the skin as well as the liver, acting in some measure vicariously, and performing double duty in the tropics, is also liable to diseased action. With respect to inflammation in the alimentary tube, we know how it varies in the fevers of different European countries, or in different epidemics of the same country. African fever in general assumes a much more decidedly remittent character than fever in Europe, but in all cases of fever there is more or less remission, and in some of those I saw in Africa the remission was very slightly marked. In Africa, perhaps, the morbid impression is more decidedly made upon the nervous system than in the fevers of Europe. The *severe* bilious remittent seldom, if ever, affects a person more than once, but the same is said to be the case with the genuine typhus of Europe.

The symptoms of the "severe bilious remittent" do not differ materially, at first, from those at the commencement of

fever in this country. A person feels chilly and uncomfortable, with pain in the back and limbs; followed by nausea, headach, quick pulse, and hot skin. The intensity of all these symptoms varies, of course, in different cases. In some the rigor is well marked, in others trifling; the nausea is very distressing; the headach generally very severe; the heat of skin almost constantly intense, so as to give a tingling, almost painful sensation to the fingers laid on it; the face often looks bloated; the eyes are generally injected, and have a heavy, stupid look; the conjunctiva is sometimes yellow. The tongue white and flabby, very rarely dry and hard, or marked with a red streak in the centre; sordes on the teeth are very rare; the skin varies from a slightly dusky tinge to a deep yellow. When vomiting takes place it may be bilious, or the fluid be mixed with patches or shreds of membrane, or in a few cases like coffee-grounds; the urine is said to be copious; in the cold stage it is scanty and high-coloured, sometimes of a lemon colour. In the after stages the patient is generally heavy and stupid. I have not seen any cases in which there were sordes on the teeth, or the red patch down the centre of the tongue, or in which the matter vomited was anything more than bilious fluid. In one case, in which there was great irritability of the stomach, with constant vomiting of dark bilious matter, and hiccough, the tongue was dry and rough in the centre. In another case, with deep lemon-colour of the skin,—the only one I saw,—the tongue was dry, hard, and as if shrivelled. In two cases, the eyes, instead of their usual heavy congested look, were bloodshot, and with a wild and threatening expression: the pupils seemed somewhat contracted. In these two cases, the manner instead of being heavy, stupid, and indifferent, as is usually the case, was hurried and excitable; one who had the slightest delirium—a very slight wandering—died with decided symptoms of disease of the brain, rigidity and tonic spasm of one side of the body. The other cases recovered.

Are persistent irritability of the stomach, a dry, clean tongue, or with a red patch down the centre, and more or less tenderness of the epigastrium, sufficient to mark gastro-duodenitis, and to direct our treatment accordingly? Do the bright or threatening eye, with ever so slightly contracted pupil, and the excited manner, point out commencing inflammation of the brain or meninges, and require treatment directed to combat it? And are the absence of these two sets of symptoms sufficient to warrant us in concluding that there is no inflammation in those organs?

One of the peculiarities of all severe forms of tropical fever is the occurrence of death without any severe symptoms. Louis makes mention of it in the yellow fever of Gibraltar; indeed all writers on tropical fever record such cases. One of the first cases of fever I treated at Sierra Leone was of this kind. A French sailor, æt. 30, a strong, muscular man, was landed, after having been six or seven days ill at sea. When I saw him he was sitting upon the side of the bed. His eyes were slightly congested, with rather a wild expression; his skin dry and hot, but not intensely so; his pulse 90, rather feeble; his tongue white and tremulous; he had constant vomiting of whatever fluid he drank, and occasionally of bilious matter; he had no pain in the head; no delirium; answered every question perfectly rationally; and thought there was very little the matter with him. Three drops of hydrocyanic acid at once allayed the vomiting. I ordered him to be sponged with lime-juice and water, and to have a stimulating injection, as his bowels were confined. On my seeing him in the evening, I found he would not allow himself to be sponged, or to get the injection; he complained only of his bed feeling hard and uncomfortable. As I thought his manner more excited, though he still answered all questions in a perfectly collected manner, I now repeated my directions, with the addition of a blister to the back of the head. On my visit in the morning, I found he had died during the night. It appeared from the statement

of the nurse, that he had become excited at the idea of his head being shaved for the blister; he got up, walked about the room for a few moments, lay down on his bed, and died.

His companions would not allow a *post mortem* examination, but it is not likely that anything would have been found to account for death. The irritation of the stomach was easily allayed, the head symptoms were trifling, though threatening more mischief; the pulse was feeble, but still there was apparently no sinking of the powers of life. What then was the cause of death?

This case, as it was one of the first I met with, made me fear that I should find no positive indications for treatment; and that I might lose cases in a similar way without seeing anything to guide me in practice; but this was the only case of the kind I met.

I had several cases under my care from two vessels, one in the timber, the other in the ground-nut trade. They had both been lying for a considerable time at the mouths of some of the rivers, and before putting into Sierra Leone had lost several hands by fever. The symptoms in all were nearly the same. The disease had lasted from one to five days; in most of the cases there was considerable nausea; the face looked swollen; the eyes were congested and stupid-looking; the patient's manner heavy and indifferent; the tongue flabby, white, and generally tremulous; there was a sense of heavy weight or pain in the head, in many there was slight delirium and wandering, but this appeared to bear no proportion to the pain or sense of weight in the head, as there was delirium without any uneasiness in the head, and, on the other hand, pain without any delirium: some complained of uneasiness in the spine or in the limbs. In every instance there was increased heat of the skin, in some amounting to the calor mordax; in all it was very considerable. The pulse ranged from 90 to 120; its general character was soft and compressible. There was little or no tenderness in the epigastrium; in some the skin was dusky, but in none was it

yellow; there was no bright or wild look in the eyes, nor were the pupils at all contracted, perhaps rather the contrary. The symptoms did not appear very formidable, yet it was, no doubt, with similar symptoms at first that their shipmates had perished at sea.

I had now to consider what treatment I would adopt. Evidence appeared conclusive against bleeding; the results of the mercurial treatment did not appear to be much more favourable. Purgatives, blisters, and general antiphlogistic treatment at first, with wine and tonics at a later period, had formed part of all other modes of treatment, and, therefore, had, in some measure, failed along with them. Quina had been tried from time to time in African as well as in all other tropical fevers, but, though it had met with a certain amount of success, there was not sufficient evidence to give confidence in its use. The most favourable report of it is from M. Maillot, surgeon of the French army in Northern Africa. He gave quina in every stage; twenty grains at a dose in the incomplete remission. Under its use the deaths, in proportion to the admissions, decreased from one in nine in 1832, and two in the nine in 1833, to one in twenty-two in 1844–45. But in Sierra Leone the same success had not attended the exhibition of quina, and mercury alone was held in any confidence. Nor did the cases appear to me to be such as would yield to the use of quina.

I had, however, positive indications for treatment. There was nausea—an endeavour, as it appeared, to get rid of some offending matter—without tenderness at the epigastrium, and with a soft, white tongue. In all such cases an emetic was given, and the patient, as far as possible, made to drink tepid water, so as to clear out the stomach. There was increased heat of the skin; where this was trifling, the body was frequently sponged over with lime-juice and water; where it was intense I had recourse to cold affusion. The patient was taken out of bed, and two or three gallons of water poured over the body. In some instances, where there was evident affection of

the head, I poured water from a large jug on the vertex. This was repeated twice a day, and the lime-juice and cold water used in the intervals, whenever the skin became hot. Cold water was allowed to be taken freely for drink. In some cases four or five grains of calomel were given at night, with a mild aperient in the morning; in others, where I was afraid of irritation, the bowels were opened by enemata. A certain amount of relief was derived from this treatment, but still the heat of skin constantly returned shortly after the cold affusion or sponging, and no decided impression appeared to be produced on the disease; the pulse continued feeble, the tongue coated and tremulous, and the vital powers did not seem to rally.

The symptoms now were, low delirium or wandering; a tremulous, coated tongue; a weak pulse, generally very soft and compressible; a dry and hot skin. Wine had always been given in such cases, but the great mortality which had always occurred showed that the power of wine was limited. It might support the powers of life, and enable the constitution to struggle through the disease, but it possessed no power to control the peculiar state of the system which produced the remittent febrile action, to allay nervous irritability, except secondarily, or to produce a healthy action of the skin, whether its morbid heat and dryness be considered to proceed from spasm of the capillaries or not. A combination of quina and opium, in full doses, would fulfil these indications, nor did I see anything in the state of the brain, or any other organ, to contra-indicate its use in this class of cases. I have found this combination of quina and opium, when given in full doses—for otherwise it is nearly ineffectual—of extraordinary benefit in allaying nervous irritability and supporting the vital powers in several diseases. I have seen the unhealthy ulcers of venereal rupia heal almost magically under its use, and suppurating wounds and sores of various unhealthy kinds take on healthy action. The influence of

opium in supporting the vital powers is universally recognised as well in health as in disease, and its influence in breaking through the chain of morbid action which constitutes intermittent fever is known to be second only to that of quina, while it has been recognised as useful in many cases of bilious fever.

I expected then that opium would allay nervous irritability and promote the healthy action of the skin, and that quina, *where not contra-indicated*, would support the vital powers and exert the specific influence we know it to possess on that peculiar state of the system which is produced by the paludal poison. I therefore gave a grain of opium and two grains of quina, in a pill, every four hours; afterwards, in many cases, I gave it every second hour. There is no danger of too much opium being given, for the patient usually falls asleep after a very few doses, when, of course, he is not to be disturbed, and the intervals can afterwards be lengthened according to circumstances; but I believe it is best to continue it pretty freely till convalescence be established. As long as there is the least heat of skin, the cold affusion and sponging should be employed. I doubt whether the treatment by quina and opium would be found safe, without a free use of the cold affusion and sponging: the latter should be used energetically, at least until they had fulfilled the object for which they were employed. The cold affusion being employed to reduce the heat of skin, if this be not effectually and permanently done, little or no good will be derived from it. Sometimes, in a few moments after the use of the cold affusion, the heat of skin becomes as intense as before it was employed. In such cases the person should be placed sitting in the bath, and cold water dashed over him till a decided effect be produced, but not prolonged so as to cause shivering.

The temperature of the water may be lowered in some instances, or salt water may be used, but common spring or running water will generally be found to answer; for though

the temperature of the water is really high, the shock to the system is, probably, as great as that caused by colder water in temperate countries. Though the bath is the great luxury of the tropics, a person often shivers on going into water that he would consider almost tepid at home.

My experience in this disease is limited. I saw altogether but twenty-seven cases of the seasoning or severe bilious remittent fever. Out of this number there were only six to which this treatment by cold affusion and quina and opium did not seem applicable. I am aware that there is nothing more likely to lead astray than to attempt to draw general rules from a limited experience; and that in Africa as in Europe the character of the fever will vary in different years, and be modified by various circumstances. But, as far as my experience goes, this treatment will be found applicable to the greater number of cases of seasoning or severe bilious remittent fever. It also possesses this advantage, that cases treated in this way are not left in the state of great weakness which they often are after convalescence under other circumstances. When I adopted this method of treatment, I was not aware that it had been tried before, but I have since found out that a similar method has been long in use; for I find it mentioned by Rush—who, however, mentions it to condemn it—that a Dr. Kuhn gave a decoction of bark in clysters, with fifty drops of laudanum every four hours, and used cold affusion. This treatment he learned from Dr. Stephens.

I do not think it necessary to narrate a great number of cases most of which resemble each other; the following is a fair example:

August 13th. James Williams, seaman, aged 26, of full habit; three days ill, attacked at first with cold and shivering, pains in his back and limbs, and "bad headach;" had a dose of calomel on board, which purged him; his eyes were injected and heavy; his face looked swelled and stupid; his manner is sullen and indifferent, so that he can scarcely be

got to answer questions; tongue white and flabby; pulse 108, compressible; skin intensely hot; nausea. Ordered an emetic immediately, and, when its operation was over, the cold affusion, and the body to be kept sponged during the day with lime-juice and water. At the evening visit, I found that the emetic had acted freely, but some nausea still continues; skin intensely hot; and other symptoms unaltered since the morning visit; there is slight tenderness of the epigastrium. Cold affusion repeated; six leeches to be applied to the epigastrium, followed by a blister, and a draught with two drops of hydrocyanic acid.

14th. Nausea ceased, other symptoms continue the same; did not sleep during the night, and there was slight delirium; answers questions in a perfectly collected manner, but appears unwilling to exert himself to do so; cold affusion to be repeated in the evening, and sponging during the day; to have a pill with a grain of opium and two of quina every two hours; and some chicken broth. At the evening visit he had taken three pills; seemed inclined to sleep; symptoms unaltered.

15th. Had two more pills during the evening and night, and one this morning; had slept, but not very soundly, during the night; passed water, which is not so highly coloured as before; skin inclined to partial perspiration, but still intensely hot and dry generally over the body; cold affusion and sponging as before; to have a pill every third hour; chicken broth. He went on very favourably during the day; tendency to moisture of the skin increased and the heat diminished.

16th. Is not so well; no moisture of the skin, which is intensely dry and hot; general restlessness and some nausea; tendency to subsultus. Same treatment continued; cold affusion freely used; pill every second hour; chicken broth; four ounces of wine.

17th. Better again to-day; slept during the night; skin less hot, and inclined to perspire; pulse 96. To continue cold affusion, wine, and chicken broth; pill every three hours.

From this period he went on gradually improving; the skin became cool and moist with gentle perspiration, and in a few days he was quite convalescent.

The increase of fever on the 16th showed the tendency to remittent action; but in the greater number of cases no marked remission will be observed. In this case there was no marked crisis, nor did I observe it in many cases; nor was there any profuse perspiration. Under the use of the quina and opium, conjoined with the cold affusion and sponging, the skin in most cases, as in this, becomes gradually cool and moist, with slight perspiration, but without profuse sweating.

After my own recovery from fever I suffered from the most profuse perspirations; not only were my sheets, but even the bed were wet from it: on some nights I have had to change my shirt twice during the night. The perspiration had a very heavy, unpleasant odour. As all the cases of severe bilious fever I treated, with one doubtful exception, were in seamen, I lost sight of them almost immediately on convalescence, and cannot say whether they suffered afterwards from the profuse perspirations. In my own case they did not commence for several days after convalescence. Many persons at Sierra Leone told me that they had suffered from these profuse perspirations after convalescence from fever, and I believe that they are common.

The following case presents no particular feature, except in the age of the patient.

James Wilson, an English sailor boy, æt. 14, ill five days; had vomited, but the vomiting had ceased; intense heat of skin, giving a tingling sensation to the fingers; tongue white and coated; eyes injected and heavy; muttering delirium; pulse 104, compressible. The poor little fellow, even when roused, appeared not to have the slightest consciousness of where he was, but talked of his mother and playfellows in England, and "babbled of green fields." His black nurse, who seemed to be touched with some compassion for him,—rather an unusual peculiarity,—assured me "him go die—nothing no

good," and appeared excessively disgusted at my ordering him to be taken up and deluged with cold water. Two or three gallons thrown over him restored him to consciousness for the moment. I then poured about half a gallon, in a stream, from a large jug, with moderate force, on the head, which restored him to perfect consciousness. (Any one who has ever seen this sudden awakening to consciousness will not readily forget the look of pained, bewildered, questioning surprise, the mind struggling through its mists, and probably thinking the black faces and the white man pouring water, must be a dream.) He now got a pill with half a grain of opium and two of quina every two hours; the cold affusion was used twice a day, and cold sponging when necessary; his bowels were opened by enemata, and in a few days he was convalescent. He was allowed chicken-broth from the first time I saw him, the fifth day of his illness. As a general rule, moderate support was allowed from a very early period. I did not find it necessary to give much wine; in many cases none had to be given.

I have mentioned that one of my first cases, that of a French sailor, terminated fatally. The only other fatal case I met with was the following:

Captain ———, master of a small English vessel, æt. 60; spare make, intemperate habits; was attacked with nausea, pains in the limbs and spine, and severe headach. His eyes were bright, with rather a threatening expression; intense heat of skin. I did not ascertain the temperature by the thermometer, but I never felt a skin which gave so intense a sensation of heat to the hand. Pulse 104, hard; manner excited. In this case the excited manner, bright eye, and hard pulse, seemed to threaten inflammatory action in the brain, or rather its coverings. He took an emetic, which fully unloaded the stomach. The cold affusion was used largely twice a day, and cold sponging at intervals; and his bowels were freely opened by full doses of calomel and senna mixture.

On the fifth day he appeared nearly convalescent; his ap-

petite had returned, and he saw some persons on business. On the sixth he said he felt quite well, only a little weak, and was anxious to be allowed some wine or porter. But though he said he felt quite well, his skin was still rather hot and dry, his manner excited, his pulse 86, and hard. I ordered him to keep perfectly quiet, and the body to be still sponged with lime-juice and water. At my evening visit I found that, shortly after my leaving in the morning, he had got up, dressed, and gone out with his mate. It appeared that he contrived, with assistance, to walk down to the quay and drink some spirits; he then went into some of the merchants' stores, and appeared in a very excited state. I found him nearly insensible; he could, however, be roused to slight consciousness. The left side of the body was rigid, with tonic spasm; the left arm extended, perfectly rigid, with convulsive spasms of the fingers; and the pulse, rapid and weak, could scarcely be counted. The usual treatment was gone through,—blisters, turpentine enemata, &c.; calomel was largely given, and mercurial frictions used, with the hope of bringing the system under the influence of mercury, but in vain. He lived for three days. The people in whose house he was would not allow an examination.

In this case there was evidently from the first a tendency to inflammatory disease in the brain or its meninges, and I regret that I did not at the onset of the disease bring him under the influence of mercury; I also regret that I did not effectually reduce all heat of the skin. The cold affusion was freely used twice a day, with cold sponging during the day, but still the object in view was not fulfilled; the heat of skin having never been completely reduced. The apparently favourable progress which he made led me to believe that the means used were sufficient to subdue the disease; and there is little doubt that, if he had been prevented going out on the day on which he died, his life would have been saved.

The following case is the only one in which deep yellow-

ness of the skin was observed, but I could at first get no history of it.

—— Jones, an English sailor, on board an American vessel, was brought on shore to a lodging-house. It was not known how many days he had been ill.

Skin of a deep lemon colour, with dry heat of the body and coldness of the extremities. Tongue dry, hard, and as if shrivelled; no sordes on the teeth; pulse scarcely to be felt; subsultus tendinum; appears to be collected, but incapable of speaking, from weakness and the state of his tongue; occasional vomiting of dark, bilious matter, about a table-spoonful at a time. Ordered a draught, with three drops of hydrocyanic acid; warm wine and water; a pill with a grain of opium and two of quina every two hours; hot bricks to the feet, and the body to be sponged with cold lime-juice and water. Before the next morning he had taken six pills of the quina and opium. He had slept a little at intervals, and had passed about two wine-glassfuls of urine of a deep yellow colour.

He went on slowly improving from day to day; having taken about six of the pills in the twenty-four hours for four days; afterwards three in the twenty-four hours. His tongue gradually got moist, and the skin soft and perspiring. His bowels were occasionally opened by enemata. In eight days he was convalescent, without crisis or sudden change of any kind. He told me he had been five or six days ill at sea before he had been brought on shore, but he appeared to remember nothing of his case after the first or second day, when he described himself as suffering from the usual symptoms of fever.

Nothing certainly could be more unpromising than the appearance of this case at first: he appeared in an almost dying state. I cannot say that the effect of the quina and opium was very marked, as the improvement was so gradual; but still I think it is to it his recovery from an almost hopeless state is to be attributed.

I find it rather difficult to decide on the exact nature of the following case:

Mr. ——, æt. 26, two years from England; had his seasoning fever the preceding year; ate some sardines for lunch on the 12th of July; complained that evening of their having disagreed with him; felt constant nausea; drank some glasses of warm water at bed hour, which partly unloaded his stomach. Attended to business, but did not feel quite well during the 13th and 14th inst. On the evening of the 15th, as he still had a good deal of nausea, he took an emetic of ipecacuanha; but did not rest well. On the morning of the 16th was feverish, with a copious eruption of urticaria; the wheals were of very large size, and almost covering the body and limbs; his face was not swelled; he had some cooling purgative medicine. Towards evening the urticaria receded after the operation of the medicine, and he expressed himself as quite relieved. Up to this time the symptoms of fever were trifling, such as might be expected in a severe attack of urticaria. On the morning of the 17th his whole body was again covered with the urticaria, but the fever was now intense; there was burning heat of skin, and at the same time perspiration of a peculiar and offensive odour; constant vomiting; intense headach; eyes injected, with a wild and threatening expression; pulse varying in character every moment, at one time tolerably full and steady, and again so weak and rapid as scarcely to be felt. During the course of the day he was occasionally slightly delirious; his tongue was loaded and red at the tip; and there was tenderness at the epigastrium. A dozen leeches were applied to the epigastrium; he took some draughts with hydrocyanic acid and soda; and in the evening a blister was applied to the pit of the stomach.

18th. In the morning greatly better, the eruption was gone, and the general feverish symptoms much less. Towards evening, however, the urticaria re-appeared, and the fever again returned. There was now also a recurrence of the vomiting, with hiccough very constant and distressing. The pain in the head also be-

came exceedingly acute, and there was again some delirium. The head was now shaved; leeches were applied, and a blister to the back of the neck; to be dressed with mercurial ointment, as also one on the epigastrium; an enema was given without effect: he could retain nothing but a little cold water on his stomach.

19th. He remained in the same state; having derived little or no relief from treatment. I now determined to use the cold affusion; and accordingly had him placed sitting in the bath, supported, when I poured some gallons of cold water over the head and body. This was repeated three times during the day. This night he got some sleep, the first for three nights. On the morning of the 20th the urticaria completely disappeared, and also the unpleasant odour of the perspiration. The cold affusion was continued twice a day for the next three days, when it was no longer required, the head and stomach symptoms gradually declining, along with the heat of skin. On the 24th all violent symptoms were gone, and salivation appeared from the mercurial dressings, which had been kept applied to the blisters. He went on in mild fever for four or five days longer, when, without any regular crisis, he was completely convalescent. However, on recovery from the attack, he was left in an exceedingly weak state. Two or three days after convalescence a new and unpleasant symptom, pain on taking food, presented itself, the mildest aliment, a little arrow-root for instance, was sufficient to bring it on: yet the tongue was nearly healthy, and not at all red. I had recourse to everything I could think of, as this pain was of great importance, preventing a person in his weak state from taking food. Among other remedies, dry cupping was used, and a blister to the epigastrium, the blistered surface was sprinkled with a grain of the acetate of morphia, mixed with two of starch; but nothing gave the least relief. He was in other respects now quite well, and his appetite good. I at length remembered that the swallowing of tobacco smoke was a popular remedy in cases of gas-

trodynia. I advised him to try a cigar, and swallow some of the smoke. It immediately effected what all medical means had completely failed to do, and the use of a few cigars completed his recovery.

This attack appears to have been a case of severe bilious remittent fever. It wanted many of the symptoms of poisoning by fish, to which, in some respects, it approached; and though some nausea was felt immediately, the severe symptoms did not come on for three days after eating the sardines; besides, other persons who partook of them did not suffer. If it be regarded as a case of severe bilious remittent, then he must have had the disease twice, the possibility of which most medical men who have practised on the coast deny.

In the latter end of October I was myself attacked with fever. The early symptoms of it were, on two previous occasions, warded off by an emetic. I felt unwell for a couple of days, with slight headach and some nausea, and tendency to shiver, but I was still able to go out. For two days more I lay in bed, but without taking any medicine, suffering merely from some headach and feverish heat. This I endeavoured to allay by getting into my bath three or four times each day, with the assistance of my servant. At length I was unable to move, and for some seven or eight days more remained nearly unconscious how time passed. My kind friends, Dr. Aitkin and Dr. Clarke, the colonial surgeons, attended me most assiduously, and to them I feel that I owe my life. I am not aware that I was delirious, and I could rouse myself to answer questions when I made the effort, but I felt utterly prostrate and indifferent. I was brought slightly under the influence of mercury. As is usual with persons after the fever, I remained miserably weak for some time, and suffered, as I before mentioned, from profuse perspiration; and even still, after nearly twelve months, I bear about with me some dregs of the fever, such as irregular ague, cold spine, and other African discomforts.

In concluding these observations, I feel how very imperfect they are, even as regards the cases I had under my own care. To make observations on the African fever valuable, each symptom should be carefully noted from day to day; the exact character of the countenance, and of the eye; the state of the pupil; the headach; the delirium (if present); the exact temperature of the skin before and after the use of the cold affusion; and also the presence or absence of tenderness of the epigastrium in relation to nausea or vomiting; the character of the matter vomited; the condition of the tongue, should all be recorded.

We might thus hope to be able to pronounce, with something like certainty, on the presence or absence of local inflammation. But it is very difficult for any person practising on the coast of Africa to draw up tables to such an extent, and with such accuracy, as would alone render them valuable.

There are materials in the army and navy medical records for sufficiently numerous tables, showing the proportionate number of cases in which local inflammations were found after death. But then we have still to consider, could such inflammations be diagnosed with certainty during life; how far ought they to direct or modify our treatment; at what stage of the disease they occurred; and how is their occurrence to to be prevented.

The following facts appear to be pretty well established:

That a considerable number of fatal cases exhibit no traces of local inflammation.

That inflammatory patches of the mucous membrane of the stomach and duodenum are the most common inflammatory lesions.

That the brain is, in most instances, perfectly healthy.

That a congested state of the veins of the pia mater and of the sinuses, with some serous effusion, is the most common lesion found in the cranium.

That inflammation of the meninges sometimes occurs.

That there is, in almost every case of the disease, greatly increased heat of skin.

That the other symptoms generally mark an oppressed and low state of the vital powers.

That after recovery there generally remains a low and debilitated tone of the system, for a longer time than in most other diseases.

May we not conclude that the African fever requires to be treated on the same principles on which fever in Europe is treated, namely, a strict attention to symptoms, and particularly to local inflammations, as modified by the existing state of the system?

In conclusion, the following queries are naturally suggested:

Does mercury possess any power in controlling or arresting the course of morbid action, which is produced by the paludal poison, or is it really only of benefit in combating inflammatory action?

Is cold affusion likely to be sufficient, in the majority of cases, to remove the morbid heat of the skin?

Are there any remedial means by which we can allay nervous irritability, support the vital powers, and arrest the morbid remittent action?

Does the combination of quina and opium, in cases where it is not contra-indicated by local disease, seem likely to fulfil these indications?

I should be inclined to reply to the last three queries in the affirmative; but I can only venture to direct the attention of others to them, who have fuller opportunities for their investigation.

Art. VIII.—*Observations upon some Forms of Uterine Hemorrhage occurring in connexion with the Delivery of the Placenta.* By Robert Cane, M. D., F. R. C. S. I., Physician to the Kilkenny Workhouse and Fever Hospital.

The most trying and anxious moments of the physician's life, are those spent at the bed-side of cases of uterine hemorrhage. In the whole range of medical practice, few occurrences arise involving a more serious responsibility; requiring more of knowledge, firmness, and decision, or risking more the practitioner's character, and ultimate professional success. If there be added to these all-weighty considerations, the interest and sympathy which every accoucheur of a feeling mind must have for patients so situated, the incitements must be increased to study with the utmost care the nature of hemorrhage, and of the curative means for it, which art places within our reach.

Having for some years enjoyed considerable opportunities of obtaining obstetric knowledge, and having reflected a good deal both upon what I have seen in my own practice and what I have read and witnessed of the practice of others, I have been led to consider the nature of the causes giving rise to such hemorrhage, and the various occurrences which appear to promote, encourage, or prolong it, as well as the means of arresting its progress when it does occur, or of guarding against and preventing its occurrence in cases predisposed to it.

In the present paper I propose to offer a few considerations upon that hemorrhage which arises after the delivery of the fœtus, and which, with one exception(*a*), is strictly in connexion with the state of the placenta and its delivery, or else peculiar to the state of the patient's constitution, as influencing the condition of the womb. This hemorrhage may occur before, during, or after the delivery of the placenta. It may

(*a*) The bleeding from a torn perinæum, which I have included merely because it is sometimes dealt with in practice as uterine.

be internal or external. It may be gradually and stealthily serious, or considerable in quantity and productive of immediate and imminent danger. Indeed so suddenly and unlooked-for does it sometimes occur, that the accoucheur may be pronouncing his "all safe and well," and be leaving or have left the room, when he is summoned back to see his patient blanched and gasping.

Hemorrhage occurring after the birth of the fœtus usually depends on some one of the following causes:

1st. A too rapid delivery of the fœtus.

2nd. A too slow delivery of the fœtus.

3rd. A premature rupturing of the membranes.

4th. A partial and imperfect separation of the placenta.

5th. A portion of placenta being left behind after the rest is removed.

6th. A retention of an unattached placenta in a malposition.

7th. Upon atony of the uterus independent of any of these causes.

8th. Upon idiosyncrasy or hemorrhagic tendency in the individual.

9th. Upon an over distended state of the urinary bladder.

10th. Upon a laceration of the perinæum.

I shall consider each of these forms separately, and, as I proceed, will dwell on some points, not usually, I believe, noticed in books on the practice of midwifery, and especially upon those matters which might tend to prolong the hemorrhage, at a time when ordinary treatment should hold it under control. Amongst these, in addition to the nature of the ingesta allowed and the temperature of the room, I would especially direct attention to the mode of making pressure over the uterus, and to the state of the urinary bladder; each of which has, I feel satisfied, much to do in prolonging and causing a recurrence of hemorrhage. I shall consider these subjects *seriatim*, and, where it may appear useful, will refer to cases

illustrating each form, and to those signs for which the accoucheur must be watchful, as being frequently the first indications of approaching hemorrhage, and oftentimes of a hemorrhage internal and hidden from view, until developed too late for cure. They are signs independent of the indications supplied by the napkins, which should be always closely watched for some hours after delivery. The signs I allude to are,

1st. The peculiar state of the pulse.

2nd. The state of the uterus as felt through the abdominal muscles.

3rd. The sensations of the patient herself.

In resuming the several sources of placentary hemorrhage, I will briefly dispose of those, upon the nature of which writers are all agreed, and will dwell more particularly upon those matters where I have presumed to offer any view, or to notice any symptom not generally recognised.

First cause.—*A too rapid delivery.* When the fœtus is rapidly delivered, and with little or scarcely any previous uterine pain, there is usually a considerable escape of blood just before or with the placenta, and immediately after it; and, in many cases, it will be of such a nature, as to constitute active and serious hemorrhage. Occasionally it will not occur until the after-birth has come away, and not unfrequently it will be then chiefly of the variety designated "internal hemorrhage."

It would appear as if the uterus had not been exercised by previous attempts at contraction for a sufficient duration of time to give it that tone and power which will enable it to contract so perfectly as to completely close the mouths of its blood-vessels, or, having contracted, that it should permanently hold to, and continue that contraction, so as to prevent the hemorrhage, of all others the most insidiously dangerous, which arises from a little blood being first poured out, which coagulates, because it trickles slowly and is small in quantity, and whose coagulation plugs up and temporarily seals the mouth

or neck of the uterus, and so prevents, for a time, blood flowing outwards. The little goes on increasing, and the more it increases, the more the tendency to hemorrhage is increased likewise, because the gradual expansion of the uterus brings it to a state in which the mouths of the blood-vessels are more and more opened. This hemorrhage is often undetected until the woman faints, and then the previously unobservant accoucheur may, on introducing his hand, or by pressing over the uterus, remove pounds' weight of coagula, and perhaps at the moment the uterus makes an effort at contraction; under either proceeding, another gush and another swoon may release him from his charge, and leave to his suggestive conscience the thought—how a little watchfulness might have saved so terrible a catastrophe. Fortunately it does not always occur internally, but it does so frequently. On other occasions it will occur as what the nurses term "very free discharges." A napkin will be wetted every three or four minutes until fainting takes place. This discharge may occur at the end of one, two, or several hours. Sometimes it occurs and ceases, and re-occurs again. In many of those cases the hemorrhage takes place with a distinct contraction of the uterus, palpable to the hand, but devoid of pain, evidently imitating a natural and protective action, but inefficient in degree. There is this difference between it and the perfect normal contraction, that though the attendant can feel the contraction,—as evidenced by the uterus growing hard and lessening in size, and getting from under his hand down into the pelvis, while its contents, either clotted or fluid blood, are expelled,—yet the hardness speedily lessens, and he feels in its place a soft and pulpy mass, swelling up and increasing under his hand, while, at the same time, the discharge ceases until the contraction again takes place, which it may do at various intervals of five, ten, or fifteen minutes. This hemorrhage is peculiarly liable to be mismanaged by a negligent or inexperienced attendant, who may consider the period of the apparent cessation as one promising arrest of the

hemorrhage, and therefore waits with his remedies until the discharge again appears; whereas the time for treatment is in the interval, and before the discharge comes on; which discharge is to be viewed as the result of an ineffectual effort of nature to close the womb. This kind of discharge, if it be not arrested by appropriate treatment, or does not wear the patient out, will occasionally cease of itself; nature succeeding in its struggle with morbid tendency, but frequently not until the sources of after evils are left behind. It is a state of hemorrhage which sometimes becomes habitual in after confinements, recurring after each delivery, and from which, if no one attack proves fatal, the woman recovers with a broken-down constitution, shortly to die of dropsy or some chest affection. This hemorrhage from an over-quick delivery is sometimes so rapid and considerable as to be immediately fatal.

The second form—*a too slow delivery*—presents nearly the same features as to the mode of bleeding, and differs only in the nature of the cause, which appears to depend more upon actual debility of the uterus, its wanting due nervous energy or muscular strength, or from being worn out and exhausted, or from general ill-health. And therefore it happens that this variety of hemorrhage will be more unmanageable and more serious than the first; and, as might have been anticipated, it will supply a larger amount of fatal cases. It is a variety often to be met with amongst women who have married too young, and who have had a numerous family. Such cases are of ordinary occurrence in such women, from 30 to 45, or to the period of ceasing to bear children.

The third variety—*from premature rupturing of the membranes*—I am not aware of having been noticed as a source of hemorrhage. Indeed I know there are accoucheurs who boast that they continually lessen the duration of a woman's pain and the period of their own attendance, by rupturing the membranes as soon *as the os uteri is fully opened.*

At that period its rupture and the escape of the waters will certainly hurry expulsive pains. But I have long felt satisfied that this operation, so simple in itself, considered so harmless, is oftentimes, though not always, a source of hemorrhage. If we stop to examine mechanically the results of rupture of the membranes upon the placenta, we can readily understand how this occurs. While the membranes remain unbroken, the action of the uterus, propelling the whole mass of its contents together, produces as though it were a double power, the uterus pressing upon the placenta above, and at the same time forcing the whole bag downwards, whereby all that force which acts upon the bottom of the bag, in proportion as it urges it forwards, causes a secondary action, by dragging upon the edges of the placenta to which it is attached. So that while the uterus is expelling the central mass, the edges of that central mass are dragged downwards by the membranes being forced forward as an unbroken whole. It is obvious that the moment the membranes are broken this secondary power is lost; there is no longer any power acting downwards, as being attached directly to the edges of the placenta, which is then only acted upon by the pressure of the uterus upon its maternal side. While the membranes were unbroken, the action was so steady and simply perfect, that its utility must be at once recognised as a means of detaching the placenta by a gradual and beautifully uniform loosening of its connexions, and preparing it for that perfect separation which in most cases appears to occur just as the child is being delivered. Now it has been forcing itself upon my attention for some years back that I met hemorrhage, or a tendency to hemorrhage, much more frequently in cases where the membranes were early ruptured, either designedly or accidentally; and further, that I had somewhat oftener to remove an adherent placenta in such cases. Such did not occur as an invariable rule, but their occurrence was so much more frequent in such cases, relatively to general practice, that I began to reflect upon the matter, and now con-

sider it to be quite in accordance with the nature of the cases that such results should have ensued. It may be argued,—"Why is not there always hemorrhage where the membranes are ruptured early, as they frequently are?" Now I do not think that the membranes are ruptured in one case out of twenty, by the natural efforts, until after the head has entered the pelvis, and is presenting at the vulva or pressing on the perinæum. Consequently, in the great majority of natural deliveries the membranes are carried down with the presentation; and I have no doubt that hemorrhage will arise, and the placenta be adherent, and have to be detached by manual efforts, in a vastly larger proportion of premature rupture cases than in the cases where the membranes were not broken, or did not give way, until the vertex was at the os externum. During several years that my mind has been directed to this fact, I cannot call to recollection a single case occurring in my own practice, where, if the membranes came unbroken to the os externum, I had to remove an attached placenta. Nature never does anything in vain; and if the membranes were not valuable in this and other ways, we would not have them continuing so constantly unbroken until the moment of expulsion. My own mind is so satisfied upon the subject, that I never rupture the membranes unless there be some strong reason for doing so.

The fourth variety—*a partially detached placenta.* This may arise as a consequence of the foregoing, as a result of imperfect uterine action, or as being caused by injudicious efforts to separate the placenta by dragging upon the cord. It is generally of a serious kind, and requires to be promptly dealt with.

The fifth variety—*a portion of placenta being retained.* This is generally the result of improper force in removing the placenta. It may occur in a rare case, even in the hands of an able physician, who, in peeling off an adherent placenta, if it be soft and unhealthy, may break a portion of it, leaving a bit of its maternal side adherent to the walls of the uterus. Every

physician who removes an adherent placenta should lay it out on a table, and look carefully over its maternal side, to see that there is no gap indicating a piece wanting, and which has been left in the uterus; if there be it will certainly do mischief in some shape or other.

The sixth variety—*a retained, detached, but mal-placed, placenta.* This variety, arising from an irregular position of the placenta, which, though perfectly detached, may lie awkwardly as regards the uterus, and so prevent its proper contraction, is well understood by practitioners who have watched the varieties of hemorrhage, where abstraction of the placenta at once arrests the discharge. When the uterus contracts upon the placenta, while it is yet retained in its proper position within that organ, it is evidently not only pressed upon, but it is even so compressed as to feel denser to the hand than it will feel after it is removed. This pressure, which is from above downwards, and from the circumference to the centre, is exercised, when the action is perfectly normal, uniformly from all parts of the uterus upon all points of the placenta, save at the os; and while it so continues there is no hemorrhage, because the compressing and the compressed parts are so adapted to each other that there is no room for blood to escape. And while hemorrhage is thus prevented for the time, the uterus is resting as if to gain renewed strength for its final contractile efforts after the placenta is expelled, and when greater energy still will be needed to extend its contraction still further, until its internal surfaces meet, and even its own substance becomes so compressed and condensed, and its vessels so reduced in size, and so acted upon by that crossing and interlacing of its fibres, which is so remarkable in the muscular structure of the uterus, that no blood of any consequence can longer escape. Such is the perfectly normal state, but the deviations are many, and one of them is the misplacement of the placenta; so that doubled upon itself, or coiled with a channel along its centre, or turned so that its amniotic surface is to the uterus, and its

maternal surface looking downwards or to one side, it interferes with the perfect adaptation we have alluded to, and therefore blood escapes. Such malposition is common, and when it occurs the placenta must be removed.

Seventh variety—*atony of the uterus.* This class will include that atony which results from peculiarity of constitution, or from extreme prostration of vital power, or from the influence of disease. There are diseases which appear peculiarly to modify and lessen the quantity of blood lost during delivery. Thus, delivery occurring in Asiatic cholera was so bloodless as to be called by nurses "white confinements." Delivery occurring while the mother is the subject of constitutional syphilis is rarely accompanied by hemorrhage; but in typhus and common fever the tendency to loss of blood is great. But there are other diseases occurring in the neighbourhood of the uterus which appear to diminish its power, to produce atony of the organ, and thus to predispose to hemorrhage. Of three such cases which I can recollect, and where there was bleeding from imperfect contraction and feeble energy of the organ, one had enlarged liver, one had enlarged ovary, and one had Bright's disease of the kidney.

Eighth variety—*hemorrhagic tendency.* Such cases are occasionally met with, often in strumous subjects. The most unmanageable case I ever witnessed was a lady in whom the tendency to hemorrhage was so universal, that causes producing ordinary functional attacks in others were sure to cause bleeding from the nose, the lungs, or the bowels in her; and yet she was not sanguine or plethoric, and there was no disease appreciable: I am inclined to think it must have depended upon some peculiar state of the capillary system of vessels. Her confinements were awfully hemorrhagic.

Ninth variety—*an over distended urinary bladder.* It will sometimes happen that a physician called in after delivery to witness a case of flooding, may not have his attention directed to the state of the bladder; and a woman, from delicacy or

from inattention, may not allude to it: women, too, be it remembered, think nothing of retaining twelve hours' urine. Now it is easy to comprehend that a distended bladder, full of hot urine, must do mischief in such a case. Who would dream of applying a stomach warmer over the uterus of a woman just recently confined, and whose uterus was discharging blood freely. Yet, obvious as the matter now seems to me, it was only incidentally that my attention was fixed upon it about six years ago, by a lady who was suffering under hemorrhage. Smart bleeding had set in about an hour after delivery; at the end of two hours it was still uncontrolled, but upon her getting up and passing more than a pint of urine,—and in these cases the urine appears to be of a higher temperature than usual,—the bleeding immediately ceased, and did not return. Since then some similar cases have confirmed me in the impression that a bladder so distended with hot urine will cause uterine bleeding, or be a cause of prolonging it when it is present, and should in all such cases be looked after.

Tenth variety—*lacerated perinæum.* The bleeding which arises sometimes in the case of a torn perinæum is not unfrequently confounded with that which comes from the uterus. It is seen only on the napkins; and though the uterus be not large, yet I have seen cold applied over it, and ergot given, to control a bleeding which came from the perinæum, but which, after continuing for a couple of hours, had been quite sufficient to influence the pulse and to cause fainting. The attendant should, therefore, make sure in every such case that there be not a torn perinæum.

Having now enumerated those causes which appear to me to be concerned in the production of hemorrhage showing itself after the delivery of the child, I will venture a few remarks upon matters connected with the care of the patient. And first, are we right in even recognising the rule laid down by some obstetric writers, that if there be no over discharge, and matters are otherwise looking well, we may leave the room of

our patient within one hour after the delivery of the placenta? In two of the worst cases of uterine hemorrhage I ever saw, matters went on well for two hours, and in a third case hemorrhage did not appear until after the lapse of four hours. I conceive it should be a rule with the physician not to leave the house if there be even free discharge, or a soft state of the uterus as evidenced by the hand placed on the hypogastrium, unless he lives near, and has a nurse in charge upon whose watchfulness and intelligence he can rely; and it is hard to find such. He should be still more watchful if the pulse be in any degree irregular. I cannot call to mind that for several years this sign, upon which I place the utmost reliance, has deceived me. As long as the pulse varies thus,—twenty beats for one quarter minute, perhaps twenty-five beats the next,—above all, if it intermits, there is danger of hemorrhage, or hemorrhage is at hand. It is not a hemorrhagic pulse; it is not a plethoric pulse; nor yet a pulse of debility: but it is a pulse tolerably natural as to the character of its beat, but irregular as to the number of beats in a given time, irregular in rhythm, if I may so express it. There are, as I have before alluded to, three indications which often tell the accoucheur hemorrhage is beginning or begun, before blood is poured out externally, so as to arrest the attention of patient, nurse, or doctor. If blood comes freely the patient may herself call attention to it, and tell you there is "a flow," or the nurse will display a napkin. But we are now especially referring to cases where these evidences may not be before the physician. These indications are, first, the irregularity of the pulse; second, the relaxing of the uterus; third, the morbid vision and hearing of the patient. And first, of the pulse: the patient has been an hour or so delivered; the accoucheur is watching her; he has just pressed the uterus and feels it is moderately firm and of moderate size; he has felt her pulse repeatedly, and it has been 100 for the whole hour; he feels it again, it beats slowly, it is but 30 or 35 for the half minute; he

is surprised how much it is coming down; it has fallen from 100 to 70 in the minute, but the next half minute it beats 50 again. If he now puts his hand in under the binder he will find the uterus has risen somewhat in the pelvis, and feels something larger and something softer than it did a moment back. Here are two of the indications,—the condition of the pulse, and the condition of the womb. There may be now an escape of some blood upon the napkin, perhaps a gush, but frequently there is not; occasionally not a drop has as yet appeared externally, and the patient chats on and looks cheerful and well. Now is the moment of treatment,—if matters go much further the third and next indication may present itself; the patient tells him her eyes are dim, or there is smoke or a fog in the room, or she asks him with a stare did he hear that noise, or that wind, or that music, and swoons in a moment after. And now, if the uterus be felt for, it will be found high in the abdomen; in bad cases as high as the epigastrium, soft, flaccid, full of blood; and all this has been the work of a few minutes.

Be it remembered, therefore, that the pulse, the uterus, and the patient's sensations will often announce the approach and presence of hemorrhage at a time when the patient's replies, and the state of the napkins would have declared all was doing well. They are, therefore, to be assiduously watched. And, while speaking of these indications of approaching hemorrhage, I will allude to those circumstances which, if there be hemorrhagic tendency, are calculated to keep it up, or to increase it. One is an improper mode of making pressure over the uterus after the placenta is delivered. The physician sometimes places his hand directly above the pubis, laying it flat upon the anterior wall of the uterus, and so pressing it back against the spine. This pressure impedes the natural flow of blood in the part, and retards its free egress from the veins out of the womb; it does mischief too by lessening the size of the vena cava, which is pressed between it and the spine, where the iliac

veins empty into it, and so blood is kept in the uterus, and engorgement of its vessels thus produced. There is much in the mode of using pressure. I think it is Dr. Collins who, in his able work, points out that the uterus should be followed down into the pelvis with the hand; but the matter is so all-important that we cannot be too minute in our directions for regulating it. This pressure, which must not be in such a direction or such a way as to obstruct the venous circulation of the uterus, should be uniform and steady. It should not be forcible, or so as to produce pain, but should be a gentle, yet firm, grasping of the womb through the abdominal coverings; the hand being introduced above the womb, the palm looking downwards, the back of the hand towards the stomach, and the edge towards the spine; thus will the palm be able to adapt itself over the fundus of the uterus, and to guide it down into the pelvis, or resist its expansion upwards, or to aid it in expelling either its contained placenta or clotted blood. And if the hand is so placed and exercised with a gentle grasping and rubbing motion,—rubbing, as it were, the uterus upon its contents,—such a manœuvre will not only empty a loaded womb, but will induce healthy contractions, and very frequently, in my hands, has even detached an adherent placenta. In connexion with improper pressure as a source of increasing bleeding, or at least of keeping it up, I would here again allude to the bladder being allowed to accumulate urine, which will act like a warm fomentation to the bleeding womb.

In the directions for managing a lying-in patient labouring under hemorrhage, I will be minute, even though that minuteness may expose me to the hazard of recapitulating matters, much of which may be said to be known to every tyro. Be it so; yet am I satisfied and impressed with a thorough conviction that in ordinary practice they are not observed to the extent they should be, and that the consequences are most lamentable upon many occasions.

The physician should not only have a suitable pocket-case, containing laudanum, ergot, catheters, scissors, &c. &c., but he should be supplied with an elastic globular syringe, capable of holding from six to eight ounces of water, and having an ivory pipe four or five inches long, with eight or ten apertures at the top, some of them at the side. There should be an ivory shield between the pipe and bottle, which may be of Indian rubber, or gutta percha. I would no more think of going to attend a lying-in case without such a syringe, than I would of going to a case of apoplexy without my lancets. When it is necessary to use cold water as an injection into the uterus, the advantage of this kind of syringe is, that it can be filled and emptied with one hand, so that the other hand is free to press upon the uterus at the same time. For example, the accoucheur is in attendance upon a case of uterine hemorrhage arising after both fœtus and placenta are delivered. His left hand is occupied inducing suitable contractions in the uterus, while with his right he fills the syringe from a basin of cold water, passes the pipe of it into the vagina, directing its point for the uterus, and pressing the shield steadily against the perinæum, he closes his hand upon it, and so empties the full contents of it directly into the uterus. A large sponge should lie ready at the vulva to catch the water as it comes back, and thus prevent unnecessary wetting of the bed and patient. By this means the cold water is brought forcibly in contact with the bleeding vessels themselves, and the salutary effect is often as immediate as it is valuable. I am so satisfied of the superiority of this mode of applying cold over all others, that I now never use either cold wet napkins, or the douche, which were such common remedies when I was a student, and which, I regret to add, are still used much more than they ought to be. I have been using cold in this way for years, and I have never witnessed from it any of those consequences so much dreaded. I have no fear of the water passing into

the fallopian tubes, or thence to the cavity of the peritonæum; and I never saw inflammation, either of the womb or its appendages, or even common cold, supervene on its application. The left hand, which is above the uterus, should be occasionally plunged in cold water, so as to keep its temperature low, else, when it gets heated, it will cause mischief. So soon as the bleeding is controlled, and the physician feels satisfied with the condition of the uterus,—and he should not feel satisfied while it shows any tendency to enlarge and get soft under his hand, or while any one spot of it, though the rest be firmly contracted, feels soft and yielding under the fingers,—he may put on a binder. This should be done without allowing any exertion upon the part of the patient. The binder should come down as low as the trochanters, otherwise it will after a time slip upwards. Under this binder, and immediately above the uterus, should be placed a pad, made either of a couple of tightly folded napkins, or a good toilet-table pincushion; it should be the size of a thick duodecimo volume, and should be introduced *edgeways*, so as to be a shelve above the uterus, and between it and the stomach, and kept there by the bandage being tightly drawn over it. The pad may be removed after eight or ten hours. A great deal depends upon the proper placing of it and the binder. I do not think the doing of it should be left to a nurse, as it too often is. As to a plug or tampoon in the vagina, as a means of controlling bleeding after the delivery of a full-grown fœtus,—though some respectable accoucheurs have recommended it,—I believe no intelligent practitioner uses it now. I never use it except in hemorrhages occurring in the earlier months of pregnancy, when the uterus is yet small, and could not expand sufficiently, from internal hemorrhage, to cause death. I once saw this plug in consultation-practice, where the patient died with a uterus full of blood.

Now this treatment has reference merely to the bleeding,

but the accoucheur will have to consider whether there be a bit of retained or adherent placenta. This he may know by examining the placenta itself; and if there be, and that the bleeding does not yield, the hand will have to be introduced, and the bit sought for and removed,—an operation much more difficult than removing a whole placenta or a child,—one requiring all the knowledge, coolness, firmness, and gentleness of hand of which a physician is capable,—one of difficulty to him and hazard to his patient,—wherefore it must not be had recourse to without full reason. And should he not be able to see the placenta, he must then judge for himself by making all inquiry as to whether it came away of itself, or by pulling on the cord, or required the hand to be introduced for its removal. No rule can be laid down for such a case, but experience and observation will generally guide to what is right. Should the hemorrhage occur while the placenta is retained, it will have to be removed, and here judgment must also decide whether it be merely a retained loose placenta, or a morbidly-adherent placenta ; because, in the first case, it will never be necessary to introduce the hand, and very frequently not necessary even in the second variety, but it may occasionally require to be removed by detachment with the fingers. Now I am satisfied that the feeling communicated by drawing on the cord in the following manner will always decide the nature of the retention. If the uterus be kept steady with the left hand, and the attendant draws the cord tightly with the right hand, and then lets it go, feeling it still as it escapes, the sensation conveyed to his hand will be that of resistance only, if it be merely a loose placenta, retained by spasmodic or normal contraction of the uterus; but if it be an adherent placenta, the cord, when so tightened, and then let go, will escape from him with a decided spring, or resiliency, such as that felt upon raising a stone by the vacuum cord and leather process displayed in a schoolboy's " soaker." Once felt and noted,

the feeling becomes as familiar to the hand as the crepitus of a fractured bone, or the cat-purr in narrowing of a blood-vessel. Here the well-directed pressure from above, and steady but gentle traction by the cord will always dislodge the retained placenta, and will frequently succeed, too, with the adherent one; the exceptions generally being where the woman has not gone her full time, or where the contracting action of the uterus has ceased for some time before the case was seen. And, be it remembered, that a placenta so expelled by pressure from above will come away entire, no portion being left behind. In very thin subjects pressure made with the thumb upon the aorta, where it lies upon the last lumbar vertebra, will occasionally aid in arresting hemorrhage, but such pressure cannot be kept up, and is only of temporary advantage. Having now dwelt sufficiently upon the mechanical means useful in stopping hemorrhage, it is right to consider other remedies.

Ergot has been much spoken of, and extensively used, but my own experience of it is, that it is of most use in cases of atony of the womb, or where its power is sluggish; but it does not appear to me that it does good if the labour has ceased for a couple of hours. I am bound to say that, given in the manner recommended by Dr. Beatty, I have faith in its power as a preventive of hemorrhage, in cases where a predisposition to such exists. Acting upon the advice contained in his paper, I have given it in three cases of marked hemorrhagic tendency, just as delivery was taking place, and in each with decided success. Applying the child to the breast immediately after delivery has been ably advocated by a writer in the Dublin Journal. I think the child should be placed at the breast as soon after delivery as other matters will admit of, and I have always so directed; but I am not quite clear that this does more than, by creating a tendency to the breast, act as a sort of derivative to lessen the tendency to the uterus. But this is useful, and, therefore the advice ought to be fol-

lowed. The employment of stimulants and restoratives is not necessary to be discussed here: every physician will use them in flooding cases as he sees necessary, and that they may be administered even when patients cannot swallow, or cannot retain them on the stomach, is well known to all, and is exemplified in Cases vi. and vii. Anodynes are frequently given immediately after delivery to women who say they are subject to after-pains. I gave them myself some years ago, but latterly I began to think they did mischief in some cases, increasing the tendency to bleed by relaxing the uterus. I now, in ordinary cases, never give an anodyne within the first twelve hours.

Though objecting to the plug as a means of arresting hemorrhage after delivery at the full time, it will be seen from Cases vi. vii. xviii. and xix. that I have found it useful in cases of bleeding in the early months of pregnancy, and also in a remarkable case of hydatids. Case xviii. shows how cautious we should be in concluding that the risk of hemorrhage is over if a complete ovum comes away, even in the early weeks of gestation. The double pregnancy in that instance is worth recording. Case xii. illustrates bleeding from a rent in the perinæum. An accoucheur of great experience has given it as his opinion that a lacerated perinæum never occurs in unassisted labour; I have certainly seen it in labour where the woman was delivered alone. Yet I feel satisfied that improper pressure in guarding, as it is termed, the perinæum, is the cause of many rents. The perinæum never should be pressed by the hand, which should be applied only to guide the presentation forward. Sutures, for a torn perinæum, have been advised, but I do not think union by the first intention can be obtained while the lochiæ are flowing. I have seen the attempt fail in more than one case.

I will now conclude by a short reference to the after treatment of hemorrhage. In the after consequences of severe loss

of blood, the train of symptoms is oftentimes exceedingly distressing. The irritability of stomach, the agonizing headaches, the thirst, and total loss of appetite, together with the absence of all mental and bodily energy, constitute an assemblage of symptoms calling for careful investigation and able treatment. The headach is palpably dependent upon the state of the heart and circulation,—the quantity as well as the quality of the blood going to the head.

The *bruit* and *fremissement* which the physician hears and feels over the cardiac region, the patient will sometimes tell you she is conscious of, and that the "booing" which she feels going up her neck is the cause of her pain, while her sallow, tallowy aspect, too clear eyes, and bloodless lips, indicate the source of her sufferings. Now local applications are of little value in this headach. Leeches are mischievous, yet I have seen them applied; blisters are valueless; cold applications give momentary relief. To renovate the circulating mass, and to control the heart's action, are the indications to be attended to. A strong belladonna plaster should be placed over the heart. The tincture of digitalis should be given in Bewley and Evans's effervescing iron mixture; this valuable chalybeate quiets the stomach, and gives appetite, while the digitalis lessens the violence of the heart's action and increases that of the kidneys,—an important point in a malady so liable to end in dropsical effusion. Ten drops of the digitalis should be given in one or two ounces of the iron mixture three times a day; and a mild hypnotic at night when restlessness and loss of sleep call for it. Opium and its preparations seldom agree; if they produce sleep, the heart's action and headach are generally worse the next day. The sedatives which answer best are henbane, hops, lactucarium, and camphor, with syrup of poppies. Should the bowels be obstinate (and they generally are), they should be emptied by mere soap and water or gruel lavements. The bed-chamber should be thoroughly ventilated, and the patient should be kept a good deal in the recumbent position, as that in which the heart will act less tumul-

tuously, the circulation will be easiest performed, and the head freest from pain; there will be also in that position less irritation of stomach, and less tendency to faintness. Every kind of bland nourishment should be given, a little at a time, but often, light soups, jellies, claret, and once a day an egg beat up with a couple of drachms of sherry wine or brandy. Easy carriage exercise, as soon as she is able to bear it, and change of air,—if in the season, to the sea,—will gradually restore the powers of life. But such cases are tedious and require close watching, for the slightest indiscretion in diet will throw them back, and it is often many days before the stomach will bear any solid nutriment whatever. A little toast soaked in weak tea or in port wine negus, chicken panada, calf's sweetbread, and similar articles of diet, must constitute the first attempts at what often brings on vomiting and diarrhœa if given too soon.

Finally, once uterine hemorrhage has shown itself in a confinement, there is great liability to its recurrence in subsequent labours, and the accoucheur will, therefore, be on his guard, and prepared to combat a morbid action, which, although a vast number of patients recover from it, yet leaves behind those diseases which afterwards abridge many a valuable life, although death, when it comes, is charged upon other causes, the true cause having been "flooding, and the shocks of repeated uterine hemorrhage."

The following cases are given in illustration of the views now put forward. The reader will see their bearing upon this paper, and they have been given in as brief a manner as possible, so as to fasten attention merely upon the point where each case has reference to some opinion advanced, or is illustrative of one of the varieties of hemorrhage.

Case I.—Mrs. P——, a large, well-made woman, was delivered by a single pain, and without assistance; child and placenta came away together. The uterus did not contract well, and violent hemorrhage had set in by the time I arrived. Cold injections, friction, and steady pressure over the uterus,

finally induced contraction, and stopped the hemorrhage, but an hour elapsed before the womb resumed its normal size and feel.

Case II.—Mrs. W——, a weak and delicate woman, suffering severely from grief for the loss of a child that was drowned; had a feeble and tedious labour; presentation natural; was twelve hours ill; placenta came away naturally; ordinary discharges for four hours; but, as her pulse continued to vary, I did not leave her, but kept watching the womb and resisting its tendency to enlarge. At the end of that time violent hemorrhage set in, though she had got several doses of ergot; it was finally controlled by pressure, and cold water thrown up *per vaginam* into the womb.

Case III.—Mrs. S——, her fifth child, was in labour several hours, with feeble and defective pains, before the head appeared entering the pelvis; when it did, the membranes immediately gave way, it being a face presentation. In one hour after delivery there was still free bleeding, and the placenta had not come away. It was found to be adherent; and had to be detached with the hand.

Case IV.—Mrs. L———; her fourth child; good delivery, but membranes had ruptured early; placenta had not come away at the end of an hour; there was free bleeding; and an adherent placenta had to be detached.

Case V.—Mrs. P———. A case in which there was good labour; child expelled in the ordinary time, but the placenta not coming away within an hour, and there being a free discharge, I passed my hand into the vagina, and found the placenta in the os uteri, where it had fallen down, and was doubled upon itself, so that the finger readily passed in through a sulcus or slit formed by its amniotic sides being opposed to each other, without being in actual contact, and along this sulcus, as in a channel, blood was flowing. Felt through the abdomen, the womb appeared oblong and softish. Upon the removal of the placenta the bleeding ceased.

Case VI.—Mrs. C———; premature confinement at the fourth month; was called to attend her, but being from home, the case passed into the hands of a *femme sage* of some reputation in the neighbourhood. Upon my return I called to inquire for her, and the nurse told me she had been delivered about an hour before of a small fœtus, and assured me the placenta had come away. I was recalled in the course of the night and found her pulseless from loss of blood; the nurse again assured me the placenta had come away with the fœtus, and was indignant at being asked the question a second time. Resolving to judge for myself, I this time examined and found a placenta projecting from the uterus and keeping it open. I removed it, and the bleeding, then but a dribbling, ceased; yet the patient's strength was so far gone, that she was unable to swallow; even half filled tea-spoons of brandy and water, threatened suffocation. I used a bit of sponge, which, squeezed between my fingers, was made to convey the necessary stimulant, nearly guttatim along the tongue and fauces; and, after a night spent in efforts to restore warmth and reaction, and by the time she had taken over eight ounces of brandy, she rallied, giving me a useful lesson of how far I was to trust a nurse's knowledge.

Case VII.—Mrs. F———; was called to her at night; she had been delivered prematurely, about ten hours before, of twins, being pregnant somewhat about the fourth month, and the physician who attended her had been called away from her to a distance into the country. Found her cold, blanched, and pulseless, from uterine hemorrhage; was told there had been a gradual and constant draining since morning; there was considerable jactitation, and everything given to her was rejected from the stomach. Upon examination, I found a loose placenta hanging down from the uterus into the vagina, which, with some difficulty, I was able to remove, after which I injected cold water along the passages, and then used a sponge tampoon. The bleeding was immediately controlled, but the

collapse still continuing, and all remedies failing to quiet the stomach, I directed one ounce of brandy, and three of strong jelly soup, to be thrown up the rectum with a tube every hour. She got ten such injections through the night, which, aided by warm applications, restored her.

Case VIII.—Mrs. ———, the lady of a medical man residing in the country. I was required to see her in consultation with her husband and two other physicians. Was told she had been confined three weeks before; that she had a good deal of hemorrhage after the delivery of the child, and that the placenta had to be removed by her husband, who assured me it all came away; that the bleeding was pretty constant, ever since, but not much at a time, and that latterly the discharge of blood was mixed with matter so offensive, that ulceration of the womb or cancer was dreaded. The lady had quite the green paleness attendant upon uterine mischief; her lips bloodless; pulse a flutter; action of heart inordinate; dry, hot skin; glossy eyes; violent headach, and fainted upon the slightest effort to move or be raised even a few inches from her pillow; her stomach irritable, and rejecting everything. From a peculiar smell at her bed-side, I again asked about the placenta, but was given the same assurance, that it came away entire, and I was asked to examine and satisfy myself. I did so with the fingers of the right hand, aided by the left from above the uterus, and removed from the patulous mouth of the flaccid womb a piece of placenta, the size of half an orange, in a state of considerable decomposition, and with a portion of membrane attached to it. The womb was injected with cold water, a mild hypnotic draught was administered, claret and chicken jelly ordered, with Bewley and Evans's effervescing chalybeate thrice daily, to settle the stomach and serve as a tonic. And I must here do justice to that remedy by remarking, that in irritable stomach after hemorrhage, and various female diseases connected with uterine mischief, it is one of the most valuable medicines I know of. The lady made a good and rapid recovery.

Case IX.—Mrs. W——, an exceedingly delicate woman, the subject of numerous illnesses, and the mother of a large family. All her labours had been difficult and tedious. I had attended her in several confinements, but upon the present occasion there was evident failure of her constitutional powers, and the uterine action was feeble in the extreme, and long intervals between the pains, making a marked contrast with all her former confinements, which, though tedious, had always presented good uterine action. She was at last delivered, after twelve hours from the first pains. The placenta came away easily, but there was a continued flow, in spite of every effort to repress it. She got ergot, cold injections, and finally the hand had to be introduced before the torpid and flaccid uterus could be got to assume anything like healthy contraction. She required constant watching for many hours, and made a slow recovery.

Case X.(*a*)—Mrs. D——; had a good delivery. It was her second child, and everything went on fairly up to the delivery of the placenta, which came away naturally in half an hour. It was followed by active hemorrhage, for which I was in some degree prepared, as she had told me that she had violent floodings after her first confinement. The case was one of imminent danger for several hours, after which she made a slow and precarious recovery. This lady was subject to epistaxis; had, when a girl, bronchial hemorrhage; had also hemorrhage from her bowels; and upon one occasion, an apothecary, who applied leeches to her chest, had ultimately to use sutures before he could stop the bleeding. She was beautifully fair, and of a good make; no heart disease, or other organic affection.

Case XI.—Mrs. ———. After a moderately quick delivery, and the placenta being expelled by fair pains, within

(*a*) This case occurred previous to the publication of Dr. Beatty's advice as to ergot as a preventive.

about fifteen minutes, smart discharges, as nurses term them, set in, which, in despite of treatment, continued at intervals for a couple of hours: one time getting less, and then increasing again. There were no clots, but a too free discharge of fluid blood. In such cases I always enforce strict quiet for some hours, and do not allow the patient to be stirred or moved. This lady became very urgent to pass water, and as she required to rise up to do so, I refused to permit it, as blood was still flowing very freely. She now stated she had not passed water for nearly ten hours, and as there was some fulness over the hypogastrium, not very definably felt through fat and doughy integuments, I left the room for a moment; she passed fully a quart of very hot urine, and when I returned the bleeding had ceased. Analogous cases have further satisfied me that in her case the bladder of warm water laid over the uterus kept up the bleeding.

Case XII.—Mrs. O'K———, a delicate made woman, delivered of a large child, with strongly ossified head, and with face to pubis. The perinæum received a laceration of about half an inch, from which there was smart, continuous bleeding, which, after some time, induced faintness. The uterus was well and firmly contracted, and the bleeding was stopped by pressing a piece of waxed sponge against the bleeding surface. I had not at that time employed matico, but my experience of its use in bleeding from small vessels, within the last couple of years, would induce me to recommend it in a similar case. And from the violence with which the artery lying in the recto-vaginal septum pulsates in strong labour, I apprehend the possibility of a laceration involving one of its branches, that might, under such circumstances, warrant its being tied.

Case XIII.—Mrs. M'G——, her fourth confinement; was delivered safely at the end of two hours' labour; placenta came away in half an hour. Went on well for two hours, save that the pulse continued irregular, and that there was a tendency in the uterus to feel soft at its fundus. I had risen from the bed-

side to wash my hands, when she exclaimed, "Where is that organ?—there is smoke in the room," and fainted. It seemed as the work of a moment, and yet I had a uterus to deal with which had suddenly expanded, till it held, perhaps, forty ounces of blood. I immediately expelled the blood, used cold injections, and there was no return of the bleeding.

Case XIV.—Mrs. M———, the mother of nine children, stated to me that she always suffered from severe losses, and was subject to faintings after delivery. I was, of course, watchful. She had a good confinement, with free, but not excessive discharges. The placenta came away in fifteen minutes after the child. As the bleeding continued more freely than was satisfactory, I continued to watch her, keeping cold cloths applied, and the temperature of the room as low as possible. At the end of two hours her pulse still continued to vary, so that I made up my mind to remain in the house. At the end of five hours the uterus began to enlarge, and she had a fainting fit. Emptying the uterus, and injecting cold water into it, controlled the bleeding, and there was not any return. This case illustrates two points: the value to be attached to the pulse as a premonitor, or indicator of hemorrhage, and that there can be no rule as to when an accoucheur may leave his patient. The rule must be his own skill and judgment as to when he goes or when he stays.

Case XV.—Mrs. C——. Saw her in consultation with the late Dr. ——. The case had been one of shoulder and back presentation, of twenty hours' duration. She was delivered by turning, immediately after my arrival, and the attendant physician found it necessary to remove an adherent placenta, after which she was carefully bound up, and a napkin applied. The nurse watched the napkins and the attendant remained at the bedside, and everything appeared to go on well. But in three hours after I was again summoned to see her, in consequence of a fainting-fit. The physician and nurse agreed there had

been no external hemorrhage, but the uterus was enlarged up to the umbilicus, and was full of blood. She never rallied.

Case XVI.—Mrs. D—— had been delivered by a nurse, and was said to be doing well. Two hours after I was called to see her in a fit of syncope. I questioned the nurse as to hemorrhage; there was none, and she produced the napkins to vouch for her accuracy. They were but soiled after the ordinary manner, and there was no blood in the bed; but the uterus was full, soft, and above the umbilicus, pressure upon it, after the manner already described, expelled a large mass of clotted blood, when, cold water being injected, the uterus contracted to its natural size, and, under suitable treatment, the case did well.

Case XVII.—Mrs. —— had been attended in her two previous confinements by eminent accoucheurs; but in both an adherent placenta had to be detached by manual skill. I expressed my hope that this would not occur upon the present occasion; I was accordingly carefully watchful, and, by the most cautious examinations, avoided injuring the membranes, which came unbroken to the os externum. I had my left hand upon the uterus, which I followed with it down into the pelvis, as the fœtus escaped from the vagina, while, with a gentle and grasping motion, I moved the uterus upon its contents (the placenta); with the right hand I held the umbilical cord steadily, but not draggingly, making the cord a means of communication between my two hands. The placenta was expelled after a quarter of an hour of such manipulation, and the case did well.

Case XVIII.—Was called to see Mrs. S——'s cook: case of smart hemorrhage; married three months; pregnant two months; os uteri slightly open, but hard; injected cold water; bleeding stopped; placed a plug in the vagina. Next morning, upon removing the plug to replace it with a clean one, an ovum in its bag, which was unbroken, came away after the

sponge; used the syringe and cold water; no bleeding. Was summoned to her upon the fourth day for very smart hemorrhage, and found a second ovum in the os uteri, but its bag was broken, the placenta remaining; the bleeding continued for a full week, during which the vagina had to be kept plugged.

Case XIX.—Mrs. C——, aged 40, the mother of a grown-up family; was seized with violent bleeding from the uterus, some hours before I saw her; asserts positively she is not *en-famille*, though the uterus is as large as at the ninth month; the os uteri is open, the size of a sixpence, but hard and irritable under the finger; felt some soft, loose matter beyond the os uteri, which, upon removal, proved to be a mass of hydatids; used the cold injection; the hemorrhage ceased when I placed a plug in the uterus; continued to syringe daily for three days, at the end of which time she passed, with some uterine action, a *pot de chambre* full of hydatids, after which the uterus continued to bleed for a couple of hours, but was finally controlled by constant washings with cold water.

Art. IX.—*Observations on Nasal Polypi.* By William Colles, F. R. C. S., Surgeon to Steevens' Hospital, &c.

It is not my present intention to enter into a systematic description of the various forms of polypi, which are sufficiently known and described by authors, but merely to make some remarks on that form which is more generally met with in practice, and to point out, I hope, some improvements in its treatment.

Polypi are in general observed to occur at the middle period of life; however, no age or sex is exempt from the disease. I have seen it in a child of eight or nine years of age, and again I have known it to commence in a man of seventy. I have remarked it also in two persons in the same family.

Polypi are said to arise from the spongy bones; this, as a

general rule, may be true; but I have seen them grow from the septum and floor of the nose; and as it is a diseased state of the membrane, and not of the bones, that gives rise to them, we may expect to find them arising from all parts of the cavity. One great fault to be found with authors who have written on the subject is, that they do not sufficiently impress on the young surgeon the great probability there is that the disease will return, and that though he may have removed every particle of the growth by operation, yet in a space of time varying from two or three months to as many years, the patient will return with the nostril as full of polypi as ever; and not having been informed of the probability of a relapse, he will be inclined to attribute the unexpected recurrence of the disease to unsuccessfulness on the part of the operator, and to infer that he had not removed the entire of the diseased growth. The morbid condition of the membranes which gives rise to this growth may exist for a considerable time, and then cease, without any assignable cause.

I have known a girl who had both nostrils filled with soft gelatinous polypi, resembling a bunch of small grapes; they had distended the bones of the nose, always breaking in the forceps, and requiring a tedious operation for their removal. Yet in two or three months she would return with the nose as full as before. She at length got married, became pregnant, and the disease ceased to annoy her.

I have tried various topical applications after the removal of polypi: washes of various ingredients, and also powders to be snuffed up the nose, but I cannot say that I have seen any decided benefit from their use.

We should impress the patient, also, with the necessity of his having these growths removed before they fill up the nostril, and make pressure on the bones. Indeed it is only necessary to read the description of a patient given by Levret, and translated by Mr. John Bell into his work on this subject, to perceive what deformities even the most mild form of the disease

may produce, and how, if neglected, it may lead to a fatal termination(*a*).

These tumours are now in general removed by means of the forceps. We seize them as near the root as possible, and by drawing them out, and at the same time twisting the forceps, tear through their attachment. The use of the forceps is, however, liable to several objections: 1, Though we see the polypus plainly, yet when we introduce the forceps, the blades of the instrument and the surgeon's hand obstruct the view; 2, The opening the blades of the forceps is attended with pain, from the pressure on the sides of the nose, and often causes laceration of the mucous membrane; and, 3, If the nose be at all distended, so that the internal part is much larger than the orifice, we cannot open the forceps sufficiently to get one blade on each side of the polypus; we are therefore compelled to seize the polypus at its larger, or bulbous end, and are able to remove only portions of the tumour at each time; hence the operation is tedious and painful, and often attended with considerable hæmorrhage.

For the last two or three years I have been in the habit of employing, in this operation, an instrument which is free from many of the objections to the forceps, and which I first saw with Mr. Cusack, but was, I believe, originally described by

(*a*) A young man died at La Charte three years after having had the small pox, from which period he had been affected with polypi in the nose. He had seven polypi in all: his face was shockingly deformed; he had a great bulging in the root of the nose; his eyes were removed from each other, by the swelling, to three times their natural distance, and seemed bursting from their sockets; the nostrils were expanded, and the nose flattened and extended, while the cheek bones were raised to the level of the nose; the head and face swelled to an enormous size; the ears were obstructed on either side; the tears flowed over the excoriated cheek, and sometimes pus burst forth from the fistulæ lachrymales on either side; his palate was so depressed that it lay on his tongue, and bulged so that the lower jaw was depressed; the mouth was kept perpetually gaping, so that the saliva dribbled constantly from the jaws; while the nostrils were distended by the bulbous extremities of two large polypi, &c. &c.

Dr. Robertson, of Kelso, in the Edinburgh Medical and Surgical Journal, for 1803(*a*). It resembles, on a larger scale, the snare for the removal of polypi of the ear, of which a drawing and description was given in a previous number of this Journal by Mr. Wilde. We open the wire at the end of the instrument, introduce the noose beneath the polypus, and endeavour to get it as near the attachment as possible; when in this position, by drawing down the handle of the instrument the wire is tightened round the root, and a very slight force, with some rotatory motion, will suffice to remove the entire polypus.

There is another point in the treatment of polypi on which sufficient stress has not been laid by authors: which is, that we should not always be anxious to remove the entire disease at one sitting. If the polypi are numerous and soft, we can readily remove the anterior ones; but the posterior polypi have been pushed up and compressed, so as to be with difficulty seen and seized; also, if there is any bleeding, the blood will flow and coagulate over those situated farther back, so that we fail to catch them with certainty. Whereas, if we defer their removal for a day or two, being no longer compressed, they fall forward, become distended, and are very easily snared.

There is another situation in which polypi are found, and from whence their removal is attended with much more difficulty; that is, when they project backwards, growing from the posterior nares, and extend behind the soft palate, occupying the upper part of the pharynx. I have seen cases in which polypi, in this situation, differed in no respect from those growing in the nostril, being numerous, soft, and very brittle, increasing more in number than in size, and presenting only a small portion of their extremity beyond the palate. In general, however, a polypus in the sac of the pharynx is a single tumour,

(*a*) For an account of this instrument see Mr. Wilde's original paper on Otorrhœa in the former Series of this Journal, (No. 72, for January, 1844). Mr. Wilde has also employed his slight instrument successfully for some time past for the removal of gelatinous nasal polypi.

of a much more solid consistence than those which grow in the nose, being sometimes of even a cartilaginous hardness. When small, the polypus often escapes detection. The patient is tormented with all the symptoms of obstruction of the nose, and frequent attempts may be made to seek for such, and even, perhaps, to remove some natural projection. The tumour, at first, cannot be exposed to view; it is only by the touch that the surgeon can be aware of its existence; hence we would recommend the surgeon in all cases, but especially where the symptoms of the disease have existed any length of time, to pass the finger from the mouth behind the soft palate, to satisfy himself of the presence or absence of obstruction in this region. If neglected, this polypus will grow to an enormous size; it will push forward the soft palate, depressing the bones of the hard palate, so as to occupy the cavity of the mouth; it will press on the tongue, impeding deglutition, especially of solids; it will obstruct the voice and hearing, and even prevent the closing of the mouth. The patient, when asleep, will snore so loudly as to be audible to a considerable distance, and he will often start from his uneasy slumber as if suffocating.

On consulting the works of authors on the removal of these polypi, we would expect to find it easily effected, differing little from the operation on nasal polypi; but when we come to operate we are surprised to find the case far different,—that their extraction is attended with many difficulties, and that we may fail several times before we at length succeed in removing them. Some of the older authors seem to have been aware of the difficulties, and they mention cases in which they were obliged to resort to the questionable proceeding of slitting up the nose, and dividing the soft palate to enable them to get at the tumour. We are told they may be removed either by the forceps or ligature, and some have given descriptions of instruments for tying these polypi. These latter are, however, liable to the objection that they must remain in the patient's mouth till the tumour separates; during this time he is unable to close his jaws, as the

slightest movement of the instrument is attended with pain, and its constant pressure has caused ulceration of the soft palate.

When polypi, in this situation, are small, numerous, and soft, their removal may be attempted by means of a forceps, and we are directed to use one resembling the nasal forceps, with the blades bent at right angles. They are liable to the objection that, on opening them, we have to oppose the spasmodic action of the isthmus faucium, induced by the presence of the instrument; hence we cannot make many such efforts in this situation; and on closing the blades the uvula will be almost always forced between them, thus injured, and perhaps torn away; besides, from the shape of the forceps, we cannot twist off the tumour, we can only pull it, and, perhaps, break it; and even here we sometimes fail, as much of the force exerted on the handles of the instrument is lost at the angles; therefore, in this description of polypus, I would recommend the use of a curved forceps, the blades of which open, one in front, the other behind; this form of instrument would obviate some of the objections mentioned.

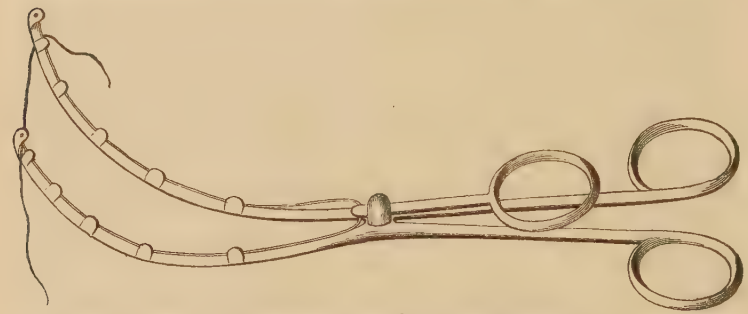
When the tumour is single, firm, and of any size, we should prefer removing it by means of the ligature: in the performance of this operation we will find little assistance from the descriptions of authors. Mr. John Bell seems almost the only one who appears to have studied and effectually treated this form of polypus. He indeed says the operation may be performed with much facility and certainty, yet when, further on, we come to read of the separate steps, we would be led to form a different opinion. He says: "I find not the slightest difficulty in this case in passing a silver wire through the nostril, and with the points of the fingers (thrust deep into the throat) raising it over the bulbous and more depending part of the tumour." He afterwards says: "But though harmless, the efforts necessary for noosing the polypus makes it a moment of great agitation and anxiety to the surgeon; his patient strains and suffocates during the attempt, however long it lasts; breathing is sus-

pended, the eyes are filled with water; the blood gushes from the mouth and nostrils, the fingers, or rather the hand, of the operator is driven deep into the throat, and the patient is held, staring and struggling, at once terrified for suffocation, excited to vomit, and alarmed and pained by the pushing of the operator, who is obliged to push his fingers deep before he even feels the tumour behind the palate, who grapples hard before he gets the lower part of it within the grasp of his fingers, and pushes still more violently, and struggles much, before he can pass the loop of the wire beyond and over it. You dare not keep him a moment in this situation: if the operator be once foiled, he may be so fifty times." He then relates a case in which he saw another endeavour to perform the operation: "More desperate struggles, I confess, I never witnessed; and when, after twenty attempts, I perceived it impossible he could succeed, I found it as difficult to disengage him from the patient as a mastiff from his hold, and seemed furiously resolved not to be defeated before a whole theatre of students."

The great difficulty of passing the ligature round this polypus arises from these facts:—the tumour grows from some part above the floor of the nose, and hangs down behind the soft palate; a ligature, therefore, passed along the nostril, and brought out at the mouth, will lie on these parts, and will be in front of the tumour. To pass it round the polypus, therefore, the noose must be passed from the mouth below, and then behind the polypus, and so expanded as to pass also on each side; but we find that there is a spasmodic action of the parts forming the opening between the mouth and pharynx, which is induced by the presence of the ligature or of the surgeon's finger; so that, no matter of what consistence the ligature is, or what shape we give the noose when in the mouth, when passing this part it will be closed, and thus remain in front of the polypus, and the difficulty will be increased in proportion to the size of the tumour.

In order to obviate, in some respects, these difficulties, and

to facilitate the operation, I have (with the assistance of Mr. Read, the cutler, of Parliament-street), and after various modifications, constructed the instrument here figured.



It resembles a curved forceps, so joined, that, on closing the handles, the blades separate; across the end of each blade a semicircular notch is formed, sufficiently large to allow the ligature to move easily; this notch may be closed by means of a wire running in front of each blade, which can be passed across the notch by means of a ring moving at the hinge of the instrument.

In performing the operation the selection of a ligature is a matter of some importance: a metallic one is liable to snap across on being tightened or twisted, and a cat-gut one, on being moistened, becomes too pliable and apt to twist, therefore, as neither will answer singly, I generally make use of one of thin silver wire and cat-gut twisted together; this gives a firm, consistent, and strong ligature. This ligature is readily passed through the nose and brought into the mouth without the intervention of any other instrument. We double the ligature, give it a slight curve, and pass it along the floor of the nose; the patient will soon be aware of its presence in the throat, where it will produce cough, and some convulsive efforts; on opening the mouth we readily see it, and by means of the finger, forceps, or blunt hook, we can bring it forward into the mouth, when we apply the supplementary ligature to draw it back if necessary. We then open the apertures in the ends of the forceps, the blades being closed, put the ligature into the

open notch in the instrument, where we secure it by pushing up the wires. If the tumour be large and visible, it will assist the operation to pass a hook or forceps through the noose of the ligature, and seize the tumour, and draw it forwards and downwards; we thus render the tumour fixed, make room for the free motions of the instrument behind it, and allow the ligature to run smoothly over its sides; then, with the hook in the left hand, the surgeon passes with the right the closed forceps, armed with the ligature beneath and behind the polypus, and, depressing the handle, carries the ends of the instrument so as to be on a level with the insertions of the tumour; he then closes the handles, by which he opens the blades, and spreads out the noose of the ligature, when an assistant, gently pulling the ends hanging from the nose, causes it to glide along the sides of the tumour. By drawing back the wires, by means of the ring in the instrument, the ligature, thus set free, is left encircling the insertion of the tumour, and the instrument can be removed. It now remains but to fix the ligature, and tighten it so as to cause the death of the tumour; this is generally effected by means of the double canula, or, what I prefer, that of Græfe, where the ligature is fastened to a button, moveable along the canula by means of a screw, for with it we can tighten the ligature without twisting it or the canula, which latter proceeding is always attended with considerable pain to the patient.

Having thus effectually applied the ligature, and insured the subsequent separation of the tumour, there remains one important proceeding before concluding the operation; that is, to pass a ligature through some portion of the tumour, and leave it hanging from the mouth; for it has happened that without this precaution the tumour has separated while the patient was asleep, fallen into the pharynx, and, if small, has been swallowed, or, if large, has almost suffocated him.

With this instrument, or some modification of it, I have operated in four cases: in one the tumour was as large as an orange, and there was not room for the finger to get behind it,

even if the finger were long enough; in two others, one the size of a walnut, the other somewhat larger, it also proceeded most satisfactorily; in one small one I only snared half of the tumour, and I could not afterwards pass a ligature on the remaining portion of it, it was so small. This is the only case where the operation did not succeed perfectly.

The foregoing remarks refer to one form of polypus, of which there are different species;—it is that which is denominated the benign or non-malignant polypus, which, small at first, may increase without undergoing any alteration in its character so as to cause the death of the patient; it destroys solely by secondary effects, such as pressure on the brain, or some vital part. But besides this, I have no hesitation in saying that there is another form, a malignant polypus, which is malignant from its very commencement, and will most certainly end in the death of the patient, for its course cannot be arrested. Palliative treatment may render its progress slower, but severer measures will only hasten its fatal termination; it destroys not from its bulk, but from a malignancy inherent in its nature, which acts as a poison on the constitution. Of this description I have already seen three well-marked cases. I would not have made any remark on this form of polypus, but that Mr. John Bell, in his otherwise excellent work on this subject, denies the existence of it. He says a benign polypus may so increase as to destroy life, and hence may be termed malignant, and he uses much plausible reasoning in his endeavour to establish this as the only form of polypus, whereby he might lead an inexperienced surgeon to adopt the very erroneous notion, that in every case of polypus he may, with impunity at least, if not with benefit, resort to a severe operation for the removal of the tumour.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

On Wounds and Injuries of the Chest; being the Third Part of the Lectures on some of the more Important Points in Surgery. By G. J. Guthrie, F. R. S. London, Churchill. 1848. 8vo. pp. 109.

The volume before us, which forms the concluding Part of a series of valuable practical observations in the form of lectures, constitutes also the completion of the author's records of the surgery of the Peninsular War. The principal cases, therefore, illustrative of the several "important points" treated of, were furnished in the persons of the poor fellows whose blood has long since dried on the plains of France, Spain, Portugal, as well as the Netherlands. The author states, in the commencement of the preface, that the observations in this work "are published nearly as they were delivered on all practical points, in those Lectures on the Principles of Surgery which for thirty years were open to all the officers of the various branches of the Public Service." He then reminds all his former hearers who may read the book, as well as any who shall derive instruction and assistance from the precepts therein laid down, with what a well-grounded confidence he can now reiterate an advice so often urged in his oral addresses,—to follow steadily the rules which he had laid down, "until," he says, "you have reason, from your own observation, or from that of others, to doubt. A little further experience will then enable you to confirm what I have said, or to lay down in turn other principles, which, while they supersede mine, may be of more service to mankind." Having also reminded his readers that those rules of practice consisted in improvements arising out of the experience obtained in the course of the war, rather than a detail of doctrines of anterior date, he then proceeds to notice in review a number of circumstances connected with the hospital arrangements of the British army while the war continued.

That the perusal of these brief but interesting details affords material for sad and melancholy reflection, is indeed too apparent, when we find it stated that, notwithstanding the daily improvements in science, and the apparent efficiency of young, active, and intelligent surgeons, who were *ready* to use every means which humanity or skill could suggest, yet that many, too many, valuable lives were lost, owing to an utter inability on the part of the surgeons to get through more than a portion of the heavy mechanical labour by which they were overwhelmed; the duties which devolved upon them having been so arduous, and the number to perform the necessary duty so scanty; yet all the sufferers received their share of attention at the hands of the medical officers. How small was that share; how utterly inadequate, we must leave to the imagination of our readers; while we regret that it should be said of a period even so late as that of the Peninsular War, that a British soldier should perish for lack of the same medical aid which we now see every day liberally bestowed on the sick paupers in our workhouses; yet the fact is as we have stated. However, let us hope that the time may come when it may not again be said that a nation's best blood shall be lost through a similar defective arrangement, while, as we have said, there is abundance of time and care bestowed upon the pauper, who makes a compliment of submitting to the no less skilful, because to him irksome and unprofitable restraint of hospital discipline, that he may be relieved of some loathsome disease, whose exhibition was his source of gain.

These remarks do not apply to the entire period occupied in the campaign; on the contrary, we find that, when our troops had arrived at Orthez, or rather from the time they had passed over the Pyrenees, and had reached the Adour river, before the battle at Orthez, the medical department was pretty well reinforced, and the arrangements for the proper attendance of the sick and wounded were rendered tolerably perfect. The Duke of Wellington crossed the Adour early in the year 1814, and our countrymen fought their way through Orthez, Tarbes, and Toulouse, at which last place they gained a victory on the 10th of April.

"On all these several occasions, from the Adour to the Garonne, a sufficient number of doctors was forthcoming; and when the army moved forward from Toulouse, the medical department accompanying it was equal to the charge of the wounded of another battle, if one had taken place. The hospitals at Toulouse were left in the highest order. The French and English surgeons visited each other; every case of interest was thoroughly investigated; and the surgery

of the British army and of the empire dates much of its improvement from the facts elicited or confirmed on that occasion. And why was this so? Simply because the necessary means of every kind were at hand: the medical men were numerous, young, and efficient."

Within one year came the battle of Waterloo, at which it has been stated, and that too by British soldiers, who had witnessed the bloody conflict at Albuhera, and the murderous assaults at Cuidad Rodrigo, Badajoz, and San Sebastian, that they never beheld such wholesale slaughter as at Waterloo,—so obstinate and perilous was that conflict. With the killed, however, we have not to do, but the wounded—what became of them? They were as scantily supplied with surgical attendants as at the worst of times before, and the comparatively few medical officers who had charge of the wounded were, as before, overwhelmed with work, half dead from fatigue, and consequently but badly able to pay the necessary attention to the sufferers, much less to assist in the advancement of the science of surgery. The most strenuous efforts were made to obviate this deficiency; and although Flemish surgeons were employed,—although numerous amateur surgeons hurried over from London, anxious to be of use in a time of such urgency; and, in fact, all quarters aided in supplying hands to do the good work, the evil was only partially rectified,—the mischief of the past could not be recalled. "The result was, that the great battle of Waterloo, with its host of wounded, and its almost wonderful opportunities, added little to surgical science. I am not aware," the author continues, "of one single fact brought out, confirmative of any surgical principle, beyond what was known and had been practised in the south of France the year before."

Mr. Guthrie then goes on to comment on a similar melancholy result in our own immediate times, namely, in the four great battles lately fought in India; he very properly attributes the mischief, not to this commander or to that, but to the defective *system* which is pursued, by which the armies under all our great generals have suffered alike in this respect; "and their successors will also suffer, if the civil authorities of the country will not allow themselves to be guided in matters which they do not practically understand, and a knowledge of which they have not acquired in a manner to render it thoroughly efficient."

The first lecture opens with some useful remarks on the propriety of *surgeons* making themselves acquainted with the

medical treatment of internal diseases during the earlier years of their studies; these remarks contain, in fact, a repetition of the opinions urged by the author nearly a quarter of a century ago in his introductory lectures. A general acquaintance with the phenomena presented by visceral disease is obviously of great importance to the surgeon, whatever may be the nature of the injury he has to deal with; but in particular is such knowledge of value when he comes to treat a case of injury of the chest, whether it be a contusion of the parietes or a penetrating wound involving serious damage to the cavity or any of its contents; for the author shows, by reference to original and cited cases, that an injury to the thoracic wall, without penetration, may give rise to a serious and even a fatal inflammation of the contained parts, of which Dr. Stokes's case (No. 10), was a remarkable instance. In this man, who died four days after admission into hospital, gangrene had supervened upon inflammation of the right lung, the effect of two several injuries inflicted upon the same part of his chest.

The author, in the course of his remarks on the value of abstracting blood early and largely in the treatment of pneumonia and pleuritis, gives rather an amusing account of his early experience of its efficacy, while stationed at Berry Head and in British North America. The young doctor, as he was called (he being but seventeen years of age), had to deal with men replete with youth, vigour, and cheap gin; he, therefore, carried his depletory measures in every case at once to full fainting, and repeated the bleeding every four hours, or even oftener, as long as pain and dyspœna were complained of. This he found the essential part of successful treatment. Next in importance came nauseating doses of tartar emetic. He recommends mercury as a remedy of the greatest value in serious inflammations, such as pleuritis, "but of less value than tartar emetic in the first stage of pneumonia, than which it would appear to be more efficient in the latter period of the stages of hepatization and infiltration, though some physicians agree with Laennec, and place entire confidence in its efficacy in all." He always combines it with opium.

Our author's remarks on typhoid pneumonia, and on thoracic effusions, serous and purulent, are instructive and judicious; the perusal of them, however, rather disposes our mind to the idea that they savour more of the desk than of the bedside. Mr. Guthrie, indeed, all through this book, takes frequent occasion to notice the writings of those who have devoted themselves more particularly to the *medical* department

of chest affections. He attributes the occurrence of pleuro-pneumonia, after amputation, to phlebitis and purulent absorption.

Speaking on this subject, he says:

"I was the first, I believe, to draw attention in my work on Gun-shot Wounds, published in 1815, to the connexion which existed between the latent disease of the lung which may be called pleuro-pneumonia, somewhat resembling these complaints when of a typhoid character, and to its occurrence after the operations for amputation, for, although affections of the liver and even lungs, following injuries of the head, had been observed by Morgagni, Valsalva, Quesnay, and others, they were always considered to be accidental circumstances. I have also related, or referred to cases of this disease, and of purulent deposits, in the third edition of that work and its Appendix. It is evident that I then considered these inflammations of the lung, and purulent deposits in other parts of the body, to be dependent on the same cause, and I suspect they are both more intimately connected with inflammation of the veins, and the absorption of purulent matter, which may be deposited in the cellular texture of the body with impunity for a time, but which in the lung or pleura is followed by low inflammation, ending in death. The treatment, which, as far as I know, has been hitherto almost always unsuccessful, ought apparently to be conducted on the same principles as those which are adopted in typhoid pneumonia, or typhoid pleuritis, although the dissections I have made, or am acquainted with, authorize my saying, that these two complaints have been so combined, as to prove that in this particular disease they are not distinct affections. Mr. Rose drew attention to these depositions and affections of the lung, after injuries and operations, in a paper read before the Medico-Chirurgical Society in 1828, thirteen years after my first publication, and M. Marechal did the same thing in Paris, in the same year, both being one year after the publication of the third edition of my work on Gun-shot Wounds, and without adding anything to the facts I had stated, or to our knowledge on the subject; and it is a matter of surprise to me, that Dr. Townsend, in his able article on Empyema, in the Cyclopœdia of Practical Medicine, should have noticed the labours of Mr. Rose and our continental brethren, without referring to mine, which preceded them by so long a period,—a point of no consequence, further than it may as well be known that the science of medicine is indebted for this fact to my record of the practice of the Peninsular War. Andral has been led to believe, that 'during the period of profuse discharge, pus is taken into the circulation, and subsequently separated from the blood, as mercury, when injected into a vein, is found to deposit its globules in different parts of the body.' It is impossible to say, even if this opinion should be correct, what may be the cause which leads to its deposition in particular parts. I have supposed it to be from its giving rise to irritation in one that

is weak, but that is not an explanation, although it may be the fact."

His ninth lecture treats at considerable length of penetrating wounds of the chest, and their consequences; after which come gun-shot injuries; and here we have five cases detailed, in all of which the upper part of the lung was wounded. These cases "are in general more dangerous than those of the lower part, from the vessels being larger, and from the greater difficulty with which any extravasated blood or fluid can escape." On perusing these five cases we find that they tend to shew that, notwithstanding the severity of the wounds, provided we have a healthy constitution to deal with, the amount of inflammation is perhaps less than we might have been led to expect.

Mr. Guthrie's comment on the cause of death in those who fall in duels, we give in his own words:

"In cases in which the external opening or wound does not communicate freely with the cavity of the chest, the principal danger arises from the inflammation of the pleura ending in effusion, which, if not evacuated, leads to the loss of the individual. It is the great fact to be attended to in the treatment of pistol-wounds of the chest, or those made by small balls which do not pass out. All the persons I have seen die from small balls, have died with the affected cavity more or less full of fluid. The *post-mortem* reports of all persons killed in England, in duels, by wounds through the chest, unwittingly attests this fact, as well as the insufficiency of the surgical treatment they received; and the necessity for the future for its amendment. It is in these cases that the stethoscope is most valuable; its constant use is indispensable whenever the respiratory murmur has been gradually yielding before the encroachment of the effused fluid, which, in the first instance, looks nearly like red-coloured serum. When this murmur ceases to be heard, except at what is the upper part of the chest, whatever the position of the patient may be, it is full time to enlarge the original opening, or to draw off the fluid by the trocar and canula."

The eleventh lecture contains several cases of important interest in several points of view. The case of General Sir R. Crawford (No. 129), who received a musket-shot wound at the storming of Cuidad Rodrigo, is one of them. In this case the ball had barely impulse sufficient to carry it through the thoracic wall, but not having force enough to penetrate the lung, it fell down on the diaphragm, and death resulted from inflammation and effusion. Mr. Guthrie gives eight cases in which balls either falling or being about to fall into the cavity, or being gradually dislodged from the bodies of the vertebræ or the inside of the ribs by the suppurative process, have come

ultimately to rest on the diaphragm in the angle formed posteriorly by this muscle with the thoracic wall, near the spine. Here they have sometimes been found, rolling in pus, or encased in a fibrinous covering, the result of long-continued disease. One of these eight cases (No. 118) was originally reported by Dr. Stokes in the former series of this Journal, from whence it is quoted.

The concluding lecture treats of hæmorrhage from wounded intercostal or mammary arteries, protrusions of the lungs through open wounds: and lastly, gun-shot wounds and other violence inflicted on the head and neck; this is not the least interesting part of the book, and one to which we wish especially to call the attention of our readers.

In fine, we must say that we felt considerable interest in the careful perusal of this concluding series of records of the surgery of the Peninsular War by Mr. Guthrie, to whose accurate and extensive observation in noting whatever is of practical importance, as well as to his faithfulness and zeal in communicating the results of his very matured experience, modern surgery is so much indebted, especially as relates to those affections and injuries with which it is chiefly, although not exclusively, the duty of the military surgeon to become well acquainted.

A Practical Treatise on the Diseases peculiar to Women. Illustrated by Cases derived from Hospital and Private Practice. By SAMUEL ASHWELL, M.D., &c. London, Churchill. 1843. Third edition. pp. 772.

ON the appearance of the First Part of Dr. Ashwell's valuable work, we directed the attention of our readers to its merit. Some apology is due to the author for our omitting to notice the subsequent Parts, and as our best *amende* we will set about it at once.

The First Part treated upon the functional diseases of the female economy,—amenorrhœa, dysmenorrhœa, menorrhagia, vicarious menstruation, chlorosis, leucorrhœa, hysteria, &c.

The Second Part opens with general remarks upon the history, symptoms, diagnosis, pathology, and prognosis of the organic diseases of the womb; and then follow chapters on indurated tumours of the walls of the uterus; premature labour in pregnancy complicated with organic disease; organic diseases of the cervix and os uteri; organic diseases of the mucous membrane of the cavity of the uterus; displacement of the

uterus; diseases of the ovaries; diseases of the external organs of generation; and the morbid consequences of undue lactation.

Taking these subjects in the order in which the author has placed them, we shall endeavour to lay before the reader a short abstract of Dr. Ashwell's opinions on some of the more important. The definition given of "tumours of the walls of the uterus, characterized by induration," is as follows:

"These are always either of fibrous, cartilaginous, or calcareous hardness, varying in size from a pea or a small nut to the volume of a pregnant uterus of the later months. They exert only a slight influence on the constitution, and frequently exist almost unnoticed, till, by their magnitude, they press upon neighbouring structures, mechanically interfering with their functions: inflammation and its consequences may then ensue. Their malignancy is denied by many; *but there is probably sufficient evidence of their belonging to the scirrhous variety of carcinoma.*"—p. 285.

The first part of this description applies very accurately to what are commonly called fibrous tumours; but, certainly, if Dr. Ashwell means to refer to these morbid growths, then the latter part, which we have put into italics, is, in our opinion, quite inaccurate. We have examined many specimens of these fibrous growths in their early stage, or when they have become cartilaginous or calcareous, and watched many patients labouring under them, and yet we have never, in any single instance, had reason either to consider them malignant, or in the least resembling scirrhus.

The author divides these tumours into, first, those which form externally, and protrude the peritoneal coat of the uterus; and, secondly, those which grow internally, and carry before them the mucous membrane.

The symptoms of each kind will, of course, vary; but generally they are trifling until the tumours reach such a size as to press on a neighbouring viscus, nerve, &c. Nay, even when large and stationary, they may interfere but little with the duration or the enjoyment of life. Such, however, is not the case with scirrhous tumours of the uterus. Nor is it always so with the fibrous growths:

"Occasionally, after months or years of inactivity, a period at length arrives when their growth and the results of it are so conspicuous and decisive as to demand all the prompt and efficient relief we are able to give. In such states I have found the iodine extremely useful, always except in utero-gestation."—p. 287.

At first sight we, probably, should have thought pregnancy

a very unlikely complication; but experience has shown that it is tolerably frequent, and very dangerous:

"The tumours soften during the later months; the increased vascular supply leads to inflammation; and death generally occurs, if the tumours be of large size, soon after parturition. These facts, and the inferences deducible from them, first, I believe, pointed out by myself, have now, I think, produced their just impression. Formerly, when they were propounded, and when premature labour, artificially induced, was, under certain conditions, proposed as the appropriate treatment for pregnancy so complicated, the remedy was regarded as of doubtful value; but of late the prejudice has greatly subsided, and the argumentative and practical observations of the late Dr. Ingleby, in his able work on obstetric medicine, have gone far to elicit the truth of my views, and to corroborate the practice founded on them."

Having objected to Dr. Ashwell's view, that fibrous tumours are a lower order of cancerous productions, it is only fair to give his reasons:

"1. They possess the structure of compound adventitious cysts, the basis of this class of heterologue formations. 2. In the colour of the contained mass, and in the arrangement of the membranous septa or bands, the containing tissue, they are identical with scirrhus. 3. In hardness, occasionally justifying the application to them of the term stone cancer, they are not to be distinguished from the varieties of carcinoma already mentioned. 4. They occur very frequently in conjunction with growths of undoubted malignancy in other parts of the uterus. 5. And lastly, they possess one special attribute of malignancy,—incurability."

Nevertheless we still agree with Meckel, Laennec, Andral, Lee, Carswell, and Bayle, in denying their malignancy; nay, we are inclined to think, with Bayle and Lobstein, that they are incapable of becoming cancerous.

The profession are greatly indebted to Dr. Ashwell for the extensive trial he has given to iodine with these tumours, the results of which are of great importance, and which our own experience amply confirms:

"I have used iodine," he says, "in diseases of the body, mouth, and neck of the womb, and the different success has been precisely what might have been expected. In the walls of the uterus which are not glandular, it has generally restrained the activity of the disease, confining its bulk within the limits it had attained prior to its exhibition; and after watching some of these cases for several years, there has been no increase of the affection. The inferences I have drawn from the use of this medicine are as follows. *First.* Its in-

ternal administration, and its use by inunction, are decidedly beneficial; the advantage, if the remedy be judiciously employed, being rarely attended by any constitutional injury. *Secondly.* In hard tumours of the walls or cavity of the uterus, resolution or disappearance is scarcely to be expected, since the growths are adventitious or parasitic, and not imbedded in glandular structure. Here the prevention of further deposit—in other words, the restraint of the lesion within its present limits, and the improvement of the general health—will be the extent of the benefit derived."—p. 293.

Of course, the use of iodine is not to prevent the employment of the ordinary remedies against irritation or inflammation excited by, or in the tumours, but it is a valuable addition to them.

So much for the first kind of tumour. Those situated more internally, and protruding into the cavity, are rare, according to our author; and when they can be touched during life, they are sensitive and painful; unlike polypi, i. e. polypi that have worn through the original layer of uterine tissue, to which, no doubt, the sensibility is owing. They also give rise to hemorrhage, as do polypi; but Dr. Ashwell does not believe that a fibrous tumour ever becomes a pediculated polypus, as many experienced men think. The principal points of difference mentioned by the writer are the structure, sensibility, and vascularity in the mode of growth, and number of tumours, the internal tissues, and the occurrence of pregnancy. But although all Dr. Ashwell's remarks are entitled to respectful consideration, we confess they do not appear conclusive to us.

The only cure for polypus is its removal, but we cannot so treat hard tumours; they may be enucleated, as has been done by Lisfranc, Professor Simpson, and others, but it is next to impossible to tie them. Quiet, self-denial, absence of all local excitement, an occasional anodyne, cold vaginal injections, mild aperients, with nutritious, but bland diet, are the principal remedies. Dr. Ashwell is favourable to the use of iodine, although he seems more doubtful about its success than in the former kind of tumours.

Now let us proceed to notice some of the diseases of the os and cervix uteri. There is a short notice of *uterine congestion*, which is valuable. The local symptoms laid down by the author are:

"Fulness and weight, with dull pain not increased on pressure, in the hypogastric region; a sense of uneasiness about the neck of the bladder, and at the anus; occasional hemorrhages, especially after exertion or sexual intercourse. On vaginal examination the uterus will be found distended with blood, imparting to the finger

a swollen, doughy, œdematous feel; generally it is prolapsed, the cervix spongy, and the os patulous; but there is rarely tenderness or heat. The speculum shows the injected, shining, and venous colour of the parts, and a slight exudation of blood is frequently seen in the cervix."

The constitutional symptoms vary: sometimes there is very little complaint, in others,

"Frequent febrile attacks, slight rigors, flushings, headach, nausea, and despondency; the mammæ often painfully sympathize, and become suddenly larger and tender on pressure; hysteria is common."

The treatment is simple: rest; hip baths; scarification of the cervix, or a small bleeding; counter-irritation, &c.

But if this congestion be permanent, or often repeated, a state of hypertrophy of the uterus may be the result, with very little change in the symptoms; or, if it be confined to the cervix, it will constitute the first stage of a very common disease,—erosion, or superficial ulceration, in which we shall find most of the symptoms enumerated above, with some additions, such as local heat and tenderness; leucorrhœa, sometimes acrid; scalding in making water, &c.; very often, indeed, the real symptoms are very slight, the broken health of the patient and the leucorrhœa being alone complained of. Dr. Ashwell notices three forms of ulceration: erosion, granular ulceration, and chronic ulcer, which he thinks the same as the one about whose malignant or non-malignant character Dr. Evory Kenedy expresses himself as having been doubtful for some time.

In addition to the causes usually enumerated, Dr. Ashwell mentions one which deserves consideration:

"Sir Astley Cooper used to say that, in some cases, he was almost sure that the male semen continued partially vitiated and unhealthy for years, after the cure of syphilis; and I cannot help believing that, in *some* instances, there is in the male semen, independently even of this cause, a peculiar element of irritation. It is difficult in any other way to explain some of those unhappy results of intercourse, where, however sound and healthy the cervix and vagina may have been prior to connexion, no sooner has this occurred, than the series of symptoms described is produced anew."

In the treatment of ulceration Dr. Ashwell prefers cauterization, through the speculum, to injections, in which we fully agree with him. Nitrate of silver, the acid nitrate of mercury, oxyde of zinc, with general treatment, have succeeded in his hands. We would beg to recommend to him a trial of his favourite remedy in tumours, viz., a strong tincture or solu-

tion of iodine, applied to these erosions after an application of nitric acid, or acid nitrate of mercury. It is by far the best local application we have tried.

Of *malignant growths* from the cavity of the womb, Dr. Ashwell has seen two specimens unconnected with cancer.

"In one, an out-patient at Guy's, which destroyed life by bleeding, the growth reached nearly to the cervix, being raised about a quarter of an inch above the surrounding tissue: but in the most of these instances, the productions were probably connected either with malignant polypi, moles, hydatids, or cancer."

The principal symptoms are loss of blood from the womb, with burning or lancinating pains, without any ascertainable cause. The treatment is only palliative.

The same may be said of fungus hœmatodes of the uterus, of which our author has seen one example.

The chapters on prolapsus and inversio uteri are full of sound practical instruction, although they can scarcely be said to add to our information.

We find that Dr. Ashwell does not confirm the statements recently put forth as to the frequency of retroflexion and retroversion. It has lately been said to be one of the most common diseases of the womb, pregnant or unimpregnated. According to our experience, retroversion of the gravid uterus, though not very rare, is by no means very common; but retroversion or retroflexion of the unimpregnated womb, occurring as a disease, and giving rise to morbid phenomena, we regard as fully as rare. We do not dwell much upon the fact that we have not met with it frequently in many years' practice, as that might be an invidious argument, and one of uncertain value; but we think it very doubtful whether simple retroversion (without congestion, erosion, or tumour) would give rise to any symptoms. In Dr. Beatty's cases there was both congestion and ulceration of the cervix.

Dr. Ashwell observes:

"I have already remarked that there are practitioners who doubt the existence of retroflexion; and of late years, I believe, many cases of slight and unimportant uterine displacements have been most erroneously set down as examples of the anterior or posterior flexion; but that these affections really occur, I have not any doubt." "Denman's views, as far as they go, are correct, and I can readily understand how rare an occurrence it must be in the puerperal state; but he was wrong in supposing it never occurred in any other condition. I have seen two well-marked cases, and in both the uterus was unimpregnated."

Subsequently the Doctor adds: "I have carefully read all which has been recently published on retroflexion of the uterus, but I am still unconvinced as to the supposed frequency of this and the related forms of displacement." With regard to the value of the uterine sound in detecting their displacements, the author remarks:

"I cannot avoid thinking that this uterine sound not only detects but makes many of these supposed displacements. All practical men know that the uterus varies naturally in its position, in its degrees of mobility and immobility, and in the influence exerted upon it, as to position, by a loaded or empty rectum or bladder; and it must be kept in view, that the curve of this steel bougie may not be the curve of the uterus; and if, therefore, it is to be introduced at all (and I wish it was far less frequently so), the normal position of the organ thus spiked must be made to follow the curve of the iron instrument, entering, and thus unnecessarily intruding upon its cavity.

"If we contrast the symptoms of these supposed cases with the symptoms of real retroversion, retroflexion, and anteversion, the difference is very striking, and cannot fail to induce the conclusion that the uterine sound, an unusual degree of mobility of the uterus, and a too slight acquaintance with the normal varieties of the curve of the womb, have led to great error as to the frequency of these truly rare maladies. I am the more induced to make these observations by finding that the uterine sound and its twin instrument, invented by Dr. Simpson, for permanently fixing a piece of ivory inside the uterus, are not harmless, but when used, really do mischief.

"Two cases have recently come under my care, and I have heard of more, where the results arising from the use of this instrument have been very serious. Looking at it pathologically, I can scarcely imagine anything better devised for inducing disease. According to this practice, a piece of ivory, two inches and a-half long, is to be introduced into the uterine cavity, and its bearing must of necessity be on some part of the lining membrane, a surface ill adapted to support the pressure for two or three months together of such an instrument. The consequences may be supposed. One of the patients, from whom, after a long and distressing journey, I removed this ivory one-pronged fork, told me she had never been free from pain since its introduction. In addition, it had produced frequent and intense sexual excitement, preventing sleep for many nights together, and had kept up a constant leucorrhœal discharge. In the other example, during the two months this instrument had been worn, the sufferer, in addition to the previous complaints, had never been free from sanguineous discharge, lumbar pain, and frequent desire to micturate. In both, the speculum shewed that abrasion of the os and the ostium vaginæ had resulted from the use of the so-called uterine supporter."—pp. 634–6.

We have given this extract in full, because it is very desirable to apply the test of facts to any novel line of treatment which may be recommended for our adoption, and because the opinion of a man of Dr. Ashwell's standing and experience must carry great weight, and may, in some degree, counteract that tendency in young practitioners to adopt expedients hastily and indiscriminately. We ourselves do not estimate the uterine sound so highly as many of its advocates, neither do we think its indiscriminate application either so painless or so harmless as has been represented; but certainly, on the other hand, we willingly admit that there are many cases in which it affords valuable aid towards forming a diagnosis. Of the value of the uterine supporter, or pessary, whether of ivory or German silver, we can give no positive opinion from experience, but we should recommend great caution in its employment, on account of the irritation it would be likely to excite; at the same time, it must be confessed that we want an instrument which would keep the uterus *in situ* (in cases of retroflexion) without irritation.

Our space will only permit us to notice our author's observations on ovaritis, which he divides into acute and chronic:

"The former may be isolated, or a part of puerperal disease. When isolated, there will be dull pain, not in the hypogastrium, but deeply seated in one or sometimes both of the iliac fossæ accompanied with sensations of weight and heat, always aggravated by the erect posture, or by any sudden movement, or by defæcation. I have, indeed, known syncope induced by the severe pain consequent on getting up in bed to relieve the bladder. At first there is not much fever; but if the disease is not early checked, the pulse will become quick, the skin hot, and nausea and vomiting will occur. In some cases there is pain, not constant, but occurring in paroxysms, in the loins, and along the course of the thigh and leg of the corresponding side, if only one ovary be affected; and dysuria and tenesmus are occasionally present. If the disease has been neglected in its early stages, the ovary may become so greatly enlarged by the formation of matter in its substance, that it may be distinctly recognised by pressure in the iliac region. It is manifest, however, that this can only occur when its size is considerably increased; in other conditions, the transverse septum of the pelvis, formed by the expansion of the broad ligament, will preclude its ascent, and thus prevent such recognition. Examination by the rectum, recommended by Lowenhardt, will aid the diagnosis; but even here the size of the ovary may have greatly increased, or the finger may with difficulty distinguish it; and it should be remembered by those who seldom make these examinations, that the uterus is more readily felt than the ovary, and may easily be mistaken for it."—p. 641.

In addition, we have observed that when the inflamed mass is situated low down in the pelvis, the patient finds it not only painful on standing, but almost impossible to straighten out the thigh : when high up, it is more within the reach of an abdominal examination than is generally represented; and further, that, as the ovary is seldom affected alone, the extension of the inflammation to the uterine appendages, by increasing the bulk (if we may so speak) of the disease, will facilitate the diagnosis.

Chronic ovaritis presents pretty much the same series of symptoms, but in a minor degree.

Acute ovaritis may terminate in the chronic form; in resolution; in extension of inflammation to the uterus, peritonæum, &c.; and in hypertrophy, softening, and abscess, and the abscess may open into the peritonæum, iliac region, uterus, bladder, or rectum.

The treatment recommended is bleeding, general and local, diaphoretics, sedatives, and counter-irritation. If matter form, and the patient be much reduced, or the process tedious, Dr. Ashwell advises that the abscess should be opened. In addition, we have found great benefit from calomel and opium in the early stage, and from constant poulticing afterwards.

We have thus given a brief notice of portions of this valuable work, but we earnestly recommend our readers to study it for themselves. It contains the result of long and careful observation, extensive hospital experience, and private practice, and the author is a physician of sound judgment, clear intellect, and cautious practice. Not the least useful portion of the volume are the well-selected cases given in illustration of the diseases, and in confirmation of the opinions advanced, and the treatment recommended. If we have ventured to differ from Dr. Ashwell on one or two points, we do so with great respect for his professional attainments, and a candid acknowledgment of the claims he has to the confidence of the Profession.

Principles of Human Physiology. By W. B. Carpenter, M.D., F. R. S., Lecturer on Physiology at the London Hospital Medical School, &c. &c. Third Edition. London, 1846. 1 vol. 8vo., pp. 776.

The Cyclopædia of Anatomy and Physiology. Edited by Robert B. Todd, M. D., F. R. S., Professor of Physiology and of General and Morbid Anatomy in King's College, London, &c., &c. London, 1848. Parts 31, 32, and 33.

Great as the progress of all the subjects connected with the science of medicine has been during the last few years, we believe it will be generally allowed that no one of them has made such rapid strides as physiology. Although the great improvement in this branch of medicine is, doubtless, ascribable to a great many concurrent causes, and not the least to the fact that the more recent investigations have been guided and carried on by those great inductive principles which have done so much for the physical sciences, yet it must be mainly attributed to the astonishing discoveries which have been effected by the aid of the microscope and organic chemistry. It is true that much has been done in minute anatomy and physiological chemistry, which the advance of discovery has required to be undone, and a great deal more of which is destined, no doubt, to suffer the same fate. It is true we have to lament over the discovery of many an imaginary structure in the former science, and the analysis of still more imaginary principles in the latter; but, making all those allowances, they are daily working a mighty change in the whole aspect of physiology. It is difficult to recognise the present science of physiology in the books of twenty years back. The phrases are as new as the principles. Where we talked of "vital principle" we now substitute "cell formation;" "sympathy" has retired before the talismanic influence of "reflex action;" "nuclei and nucleoli" figure in the pages where once a motley group of humours, animal spirits, organic agents, animæ, and so forth, held despotic sway. We have reason to congratulate ourselves on these great improvements; for, as in the earliest periods so at this moment, every real step in physiology will, we trust, be attended with an equally real advance in pathology and practical medicine. In this point of view we see the inestimable importance of the cultivation of a scientific physiology. We will not assert that practical medicine *cannot* improve but with the improvement of physiology; but we hesitate not to aver that its advance

must be slow and uncertain, and that its arrival at that perfection of which it is capable is absolutely dependent on the attainment of a similar condition of perfection by its great basis.

We think the profession owes much to Dr. Carpenter. Before the appearance of the book, the third edition of which we have placed at the head of this article, we were lamentably in want of an English work on physiology even nearly up to the state of the science as it then stood. A very slight inspection of the works of Mayo, Elliotson, or Bostock, will convince our readers of the truth of this assertion. And although Dr. Carpenter has, perhaps, not done so much as we may have fairly anticipated, in original investigation, we must award high praise to a man who has given us so complete a view of the actual state of the science. In the edition before us he has availed himself of all the more important facts which have been added to his subject since the date of the former edition These additions are both numerous and important. It would be, of course, quite superfluous to mention them *seriatim*, the present edition having been already two years before the profession; but we shall pass in rapid review some of those which appear to us to merit attention.

We have in this edition an entirely new chapter on the "mutual relations of the different branches of the human family." This chapter is based exclusively on the researches of Dr. Prichard. Although the subject is, probably, treated as well as possible in the compass of five-and-twenty pages, we are not sure that this was a judicious addition. No one who really wants information on this most important subject would consult a work on "human physiology." We are aware that all our earlier writers have treated largely, in their systematic treatises, of the causes of the varieties of the human race,—a course in which they were justified at a period when our knowledge of these points was both scanty and imperfect; but it is now a very different matter. The "physical history of man" is a science by itself. It has grown to very formidable dimensions in recent times; much too great, we fear, to be compressed within the space we have just named. And we suspect Dr. Carpenter will not complain of a want of physiological matter to fill almost any amount of letter-press.

After some general considerations, our author proceeds very briefly to discuss the grounds for a discrimination of species. This has been always a source of difficulty equally to the botanist and zoologist.

"In our ignorance as to the history of the origin of the greater part of the dissimilar forms or races of organized beings with which

the globe is peopled, we are accustomed to regard two races of plants or animals as of the same species,—that is, as having had the same or similar progenitors, when they are not distinguished from one another by any peculiarities but such as the one may be supposed to have gained or the other to have lost by the influence of external circumstances during a long period of time. On the other hand, two races are regarded as constituting distinct species,—that is, are believed to have descended from dissimilar parents,—when a constant well-marked difference exists between them, such as exhibits no tendency to variation in the individuals of either race (being equally characteristic of every one), and is not effected by the lapse of time or by change in external conditions."—p. 48.

This answers very well to the definition of Blumenbach, that animals may be considered as belonging to the same species, when they agree so far in their form and habits as that those points in which they differ may be referred solely to the effect of what he terms degeneration; while, on the contrary, when these differences cannot be referred to any source of degeneration, they must be considered as belonging to different species. We think Dr. Carpenter might have very properly added to his definition, "the producing, without constraint, a fertile progeny," as Hunter and Fleming have insisted. The facts drawn from the phenomena of hybridity are daily becoming of more cogent application to this point; and, as we find a few pages further on, that "the most important physiological test of specific unity or diversity is derived from the phenomena attending the reproductive process;" and that "the general principle is, that beings of distinct *species*, or descendants from stocks originally different, cannot produce a mixed race, which shall possess the capability of perpetuating itself; whilst the union of *varieties* has a tendency to produce a race superior in energy and fertility to its parents;" we cannot doubt that Dr. Carpenter is fully aware of the important aid that may be derived in this very difficult investigation from the phenomena just named. We think Cuvier has well stated on this point, that we are compelled to admit certain forms which have perpetuated themselves since the origin of things, without exceeding these limits. And all the beings belonging to one of these forms constitute what we term a *species;* its *varieties* are some accidental subdivisions of the species. This will allow of the "degeneration" produced by temperature, climate, modes of life, diet, and some other analogous circumtances, while it affords a certain limit to them. The author then contrasts the canine and feline races, as examples respectively of what he terms "*variable* and *invariable* groups of animals,

nearly allied to each other," but adduces no facts with which we were not previously well acquainted.

The following is the general conclusion from the facts brought forward:

"It appears then that it is quite impossible to fix upon any difference of structural peculiarities as indications of the distinctness of species, until it has been ascertained by observation whether they are constant and invariable,—the races neither exhibiting any tendency to change in successive generations, nor showing any disposition to mutual approximation, by the occasional modification of the distinctive characters in the individuals composing them."—p. 50.

Next follows a section on the possible extent of variation within the limits of species. This section is illustrated by examples drawn from both kingdoms of nature. We have the very interesting proof of the organization of an entirely new race of animals, distinguished by certain physical peculiarities, disposed to become permanent under particular circumstances, in the origin of the *ancon* or *otter* sheep, in New England, already known to the public:

"In the year 1791, one of the ewes on the farm of Seth Wright, in the State of Massachusetts, produced a male lamb, remarkable for the singular length of its body, the shortness of its limbs, and the crookedness of its fore-legs. This physical conformation, incapacitating the animal from leaping fences, appeared to the farmers around so desirable, that they wished it continued. Wright consequently determined on breeding from this ram, but the first year he obtained only two with the same peculiarities. In the following year he obtained greater numbers; and, when they became capable of breeding with one another, the new race became permanent, the offspring invariably having the *ancon* conformation when *both* the parents belonged to that breed."—p. 51.

The Author then successively takes up the subjects of the extremes of variation among the races of men, and the value of physiological and psychological peculiarities, as specific distinctions; and the comparative peculiarities of the different races of mankind. In this latter section the various peculiarities, on the existence of which attempts have been so often made to found distinctions of species, are passed in review, namely: colour, the nature of the hair, and the configuration of the skeleton, particularly of the head and pelvis.

The influence of habits of life, continued through many generations, is illustrated by the instance of the Turks, who, it is well known, are descended from the nomadic tribes still inhabiting Central Asia, but who, Dr. Carpenter says, have quite

lost their original type, since they have obtained, with the fixed life, the civilization of the Indo-European race; but he has omitted to notice the fact of internal and extensive admixture of the Turkoman race with Georgian, Circassian, Arab, and other Caucasian tribes. On the other hand, we are furnished with an example of the possible amount of degradation which one of the higher races can undergo under the most unfavourable circumstances, in the condition of some of our own countrymen. The account is so interesting, that, though probably known to many of our readers in the pages of the Dublin University Magazine, we cannot refrain from giving it in full:

"On the plantation of Ulster, and afterwards on the successes of the British against the rebels of 1641 and 1689, great multitudes of the native Irish were driven from Armagh and the south of Down, into the mountainous tract extending from the barony of Flews, eastward, to the sea; on the other side of the kingdom, the same race were expelled into Leitrim, Sligo, and Mayo. Here they have been almost ever since, exposed to the worst effects of hunger and ignorance, the two great brutalizers of the human race. The descendants of these exiles are still readily distinguishable from their kindred in Meath, and in other districts where they are not in a state of physical degradation; being remarkable for open, projecting mouths, with prominent teeth and exposed gums; their advancing check-bones, and depressed noses, bearing barbarism on their very front. In Sligo and northern Mayo the consequences of two centuries of degradation and hardship exhibit themselves in the whole physical condition of the people, affecting not only the features but the frame, and giving such an example of human deterioration from known causes, as almost compensates, by its value to future ages, for the suffering and debasement which past generations have endured in perfecting its appalling lesson. Five feet two inches upon an average, pot-bellied, bow-legged, abortively featured, their clothing a wisp of rags,—these spectres of a people, that were once well-grown, able-bodied, and comely, stalk abroad into the daylight of civilization, the annual apparitions of Irish ugliness and Irish want. In other parts of the island, where the population has never undergone the influence of the same causes of physical degradation, it is well-known that the same race furnishes the most perfect specimens of human beauty and vigour, both mental and bodily."—p. 63.(*a*)

(*a*) We have no desire to enter in this place upon the discussion of the general question of the physical alteration of the human race, from external circumstances; but there are some matters connected with the opinion expressed in the foregoing (so-called) quotation from our able contemporary, and with the use which Dr. Carpenter and others have made of it, which we think it necessary to note. The article from which this extract is taken is one of a series of most valuable and instructive papers, entitled "Attractions of Ireland," which appeared from the pen of an able Irish writer, in the Dublin

The chapter is concluded by an enumeration and succinct description of the principal branches of the human family, but upon the consideration of which we have not space to enter.

In the present edition, Dr. Carpenter has given the account of the primary tissues in one chapter by itself, instead of being, as in the former one, included in that on nutrition. The importance of this subject evidently demanded such a change, and we must give the author all praise for the care with which he has brought together the most recent and best established facts bearing upon his subject. Of course a main feature in the chapter is the theory of cell formation, in giving which he

University Magazine for December, 1836. In the first place we have to accuse the physiologist of unfairly quoting the author on whose opinion he relies so much; for, instead of this paragraph being, as the reader might suppose, one continued and connected whole, consecutive in all its sentences, it is hammered out of no less than five different and perfectly distinct portions of the article, not always bearing upon each other, and, in two instances, referring to different races and localities, and extracted in detached fragments and mutilated scraps of sentences, here and there throughout the article, as Peter, in the "Tale of a Tub," fabricates "shoulder-knots" out of the will. Several words are also interpolated. In the second place, supposing that this quotation expresses correctly the opinion of the writer in the Magazine, it is by no means supported by fact, and, therefore, fails to assist the hypothesis of Dr. Carpenter. The writer in the Magazine, in order to prove his case, should have shown that the races which were driven from the north and south, westward towards Connaught, were a stalworth Saxon, or even Celtic people, of powerful make and great physical acquirements; and also that the country into which they were driven was but partially inhabited, or altogether a waste; instead of which he acknowledges that they were the "native Irish," such as still inhabit many parts of the northern districts (particularly Donegal), as, indeed, history leads us to believe they were. Moreover, the country into which they were driven was occupied at the time by a race similar in every respect to those just described, and with which, by intermixture, the comparatively few northerns (even supposing them to possess a high degree of physical conformation), must soon have become amalgamated. But we have the best possible proof that these characteristics of the native Irish, greatly exaggerated as they here are, were possessed by the aborigines of this country during the early Pagan times, for a sufficient number of skulls and skeletons of the early Firbolg and Tuatha-de-Danaan people have been discovered and preserved, to enable us to compare the modern with the ancient race: and the osseous character of both are sufficiently alike to prove the descent of the present *unmixed* native Irish (which are but few) from these early people just alluded to. Hunger, hardship, ignorance, misrule, and barbarism may stunt the stature, and debase the intellect; climate may, in process of time, alter the complexion, as in the modern Americans; bad feeding may protrude the abdomen of a pauper: but it has yet to be proved that external circumstances, without intermixture of blood, will change the form of the skull, pelvis, and femora, or alter the bones of the face. We could, moreover, prove the existence of English settlers remaining distinct for hundreds of years in some of the districts specified; of which the Joyces of Joyce-Country are notable examples. The discussion of this subject is a very inviting one, but unsuited to the present occasion. We think it right, however, to state the foregoing facts, with reference to the garbled quotation in the text, and the opinions of Dr. Carpenter.—ED.

has followed pretty closely the researches of Schwann and Schleiden, but with those modifications which the advance of the science has rendered imperative. The time has gone by for anything like profitable discussion of the merits of that theory, so fertile in its results. The main facts on which it rests are as well established as any in the whole domain of physiology; the hypothesis founded on them has itself indicated great discoveries. But sound observation, pathological(*a*) and physiological, requires certain modifications in the theory as first enunciated by its authors. In the first place, it now appears that their doctrine of original cell development was too restricted. Our readers are aware that this doctrine stated that, primarily, one or more granules or nucleoli appear, around which a *nucleus* is formed. This nucleus was considered of cardinal importance in reference to the future cell, and constituted the *cytoblast* of their phraseology. The next step was the production of a membrane, termed the cell-wall, between which and the nucleus is a cavity, the cavity of the cell. This cavity may or may not be filled with contents differing in character both from the nucleus and the cell-wall. According to Schwann, the nucleus is situated at some point of the inner wall. It is from such cells, further developed and undergoing various metamorphoses, that all organized products arise.

It is now perfectly well established that the *nucleus* is not indispensable to the formation of a cell. We can therefore no longer give it the ambitious title of cytoblast, or cell-former. Vogel(*b*) has described some bodies as occurring in large quantity in unhealthy suppuration, to which he has given the name of "non-nucleated pus corpuscles." These are bodies of an irregular form, and, after the application of acetic acid, leave only a few granules, and sometimes not even these, constituting "a species of cellular formation in which there are no pre-existing nuclei." We have seen pale cells also non-nucleated, in the exudation of pneumonia, but differing from the bodies described by Vogel, in being regular in outline, and in being of a larger size than pus-corpuscles. Another illustration of this mode of formation may be drawn from the development of the compound granular corpuscles contained in the exudation matter of pneumonia, and inflammatory softening of the brain.

(*a*) See Vogel's Pathological Anatomy, translated by Day, p. 118, *et seq.*, where Schwann's theory, in its pathological relations, is fully discussed.

(*b*) *Loc. cit.* p. 120.

Different opinions have been expressed by the various eminent pathologists(*a*) who have observed and described these bodies, as to the exact mode of their development. While Vogel (who appears to have drawn all his observations from the phenomena of pneumonia) considers the granules of which these bodies are composed to be formed within pre-existing, regularly developed, nucleated cells, which subsequently vanish, and allow the enclosed granules to separate from one another, and fall into irregular heaps,—in which opinion he is supported by Reinhardt; Henle, on the other hand, believes these bodies to be good examples of his third mode of cell development, in which the nucleus takes no essential part, or even may never appear, but where a large number of elementary granules arrange themselves into a spherical mass, around which afterwards a cell-wall is formed. And Bruch(*b*) agrees with Henle, that the large granular corpuscles frequently met with in cancerous growths are formed by an aggregation of granules, within which a nucleus is shortly formed, and the whole then becomes surrounded by a cell-wall. That this latter is one mode of origin of these corpuscles, we hold no doubt. Observations made on the phenomena of exudation in the substance of the brain have convinced us that the first step in the process here is the deposition of minute granules on the surface of the minute vessels, around which a cell-wall may or may not be subsequently developed, a nucleus not being visible at any part of the process. It is curious to find Vogel, after the very decided opinion we have just quoted from him, also stating: "On the other hand, I will not deny that occasionally the mode of formation may be reversed, namely, that isolated elementary granules may be first produced, which subsequently collect into groups, and finally become invested with a cell membrane." Here, as in so many other cases, the truth lies midway. If we had only examined the exudation of pneumonia, we should have agreed with Vogel and Hughes Bennett(*c*); if we had only examined the exudation in ramolissement of the brain, we should have agreed exclusively with Henle.

Normal structures give us less dubious proofs of our posi-

(*a*) See Vogel, *loc. cit.* p. 157; Dr. J. Hughes Bennett, in Treatise on Inflammation a Process of Normal Nutrition; also in Pathological and Histological Researches on Inflammation of the Nervous Centres, p. 56; Supplement to Müller's Physiology, note, p. 118.

(*b*) Quoted in Supplement to Müller's Physiology, p. 119.

(*c*) We must state that this able pathologist has come to the same conclusion with Vogel, after his many careful observations on the phenomena of inflammation of the nervous centres; and expresses surprise that Gluge, in describing these bodies, has omitted to notice a nucleus.—*Loc. cit.* p. 56.

tion. We have already stated that Henle has described one mode of cell formation, in which the nucleus takes no part, and the large granular bodies of the colostrum may be considered good examples of the development of cells without a nucleus. Illustrations of this fact may also be drawn from the chorda dorsalis of fish and reptiles; here, as in cryptogamic plants, a single minute spherule first appears, which soon becomes a distinct vesicle, and is rapidly extended into a cell. Vogt(*a*), too, appears to agree fully with Henle, that the relation, in point of time, of the development of the nucleus to that of the cell, may vary in different cases, and gives the same illustration, the chorda dorsalis of fish, where "cells originate without the intervention of nuclei, which only make their appearance after the cells are fully formed;" though this author is fully alive to the real importance of the nucleus, which he speaks of as "an invariable constituent of the cell." One form in which cells may be developed is given by this observer, which is characterized by the coincident formation of the nucleus and cell. This is stated to have been noticed in the embryonic cartilage of the toad, where free nuclei, or cells unprovided with nuclei, could not be detected. When nuclei were detected, they were invariably surrounded by a cell-wall; and when cells were found, they invariably enclosed a nucleus. Martin Barry, who has done so much towards establishing the importance of the nucleus as a formative agent, has arrived at conclusions differing very much from the doctrines of Schwann. In reference to the cell, he states: "The substance of the larger body is not deposited around the smaller, but the smaller is transformed into the larger. The nucleolus becomes a cytoblast, and the cytoblast becomes a nucleated cell"(*b*). The same author states, in refuting Schleiden's observation, that the nucleus is absorbed "when it has given origin to the cell-membrane;" my observations, on the contrary, showed the nucleus to have a higher office to perform than that of giving origin simply to the membrane of a cell; that, instead of being "cast off as useless, and absorbed," the nucleus is the source of new substance,—a centre for the origin, not only of the transitory contents of its own cell, but also of the two or three principal and last-formed cells destined to succeed that cell; and, in fact, that by far the greater portion of the nucleus, instead of existing anterior to the formation of the cell, arises within its cavity."

(*a*) Supplement to Müller, p. 119.

(*b*) The Edinburgh New Philosophical Magazine, for October, 1847, p. 207.

And in another place Doctor Barry(*a*) apologizes for using the terms "cytoblast" and "cell" somewhat confusedly, on the ground that is difficult to say where the former ends and the latter begins; where the *contents* terminate, and the enveloping membrane commences. Dr. Vogel(*b*) appears to have observed something similar even in pus corpuscles, "whose sharp external outline is sometimes absent, so that here we have no definite and limited deposition around the nucleus: the substance of the nucleus and the substance of the cell can be distinguished, but no cavity." These cases are termed by him cases of "cellular formation, in which a somewhat indefinite precipitation occurs around the nucleus." Dr. Carpenter fully coincides in this view of the relations of the nucleus to the cell:

"Frequently the nucleus does not make its appearance until the cell itself has been completely formed; it is rather concerned with the subsequent operations which the cell performs, than with its original development."

We may observe that later researches have led to very discrepant opinions as to the importance of the *nucleolus*, or even as to its existence. While Henle doubts the latter, Vogel seems to hold it as non-essential to the cell. Barry talks of the nucleolus of authors as a *succession of objects*, occurring after the formation of the cell, and as caused by the refraction of light, dependent upon the condition and quantity of granular substance; and is of opinion that the cytoblast of Schleiden has no nucleolus, but acquires a nucleolus before its formation is complete. Kölliker agrees with Schwann in his estimate of the part taken by this body in the early formation of the cell.

Almost every part of the original doctrine of cell development equally requires modification. We might instance especially the *position* of the nucleus, which is by no means so invariably *peripheral* as stated by Schwann and Schleiden, and which may vary (as proved by Barry in the germinal vesicle) at different periods of the development of the cell.

How far that doctrine was correct in stating that all the animal tissues are in the first instance developed from cells, Dr. Carpenter observes that:

"By subsequent research, however, it has been shown that this statement was too hasty; and that, although many tissues retain their original cellular type through the whole of life, and many more

(*a*) Philosophical Transactions, 1841, p. 202.
(*b*) *Loc. cit.* p. 120.

are evidently generated from cells, and are subsequently metamorphosed, there are some in which no other cell-agency can be traced than that concerned in the preparation of the plastic material."—p. 96.

In Dr. Carpenter's opinion, some forms of primary or basement membrane, the membrane of the egg-shell, and the simple fibrous tissues, the fibrous net-work formed in the buffy coat of the blood, and the bands formed by the coagulation of lymph upon an inflamed surface, are formed "by the consolidation of a plastic fluid which has been elaborated by cells"(*a*). And we suppose very few will now disagree with the latter part, at least, of this statement.

But that part of the cell theory which was most defective, as proved by almost daily discoveries, was its account of the *physiological* importance and destiny of the nucleus. We have seen that it held that this body was a vitally important *anatomical* element in the initiative stage of cell structure; we have seen, too, that its importance in this point of view was much exaggerated, and that it is not an essential agent in the very first steps of that process. But its character as a dynamic agent, or *organic force*, was completely overlooked.

It is to Dr. Martin Barry and Professor Goodsir that we owe, more than to any other observers, the recognition of this fact. The latter gentleman in particular has directed attention to it, and has illustrated its most important bearings in a wide field of anatomical and pathological observations. We are glad to find that Dr. Carpenter has alluded to these observations in his preface, and acknowledged the aid he has derived from Goodsir's researches; in fact we should state that, perhaps, the most interesting feature of this edition is their incorporation into the work. It is well remarked by Dr. Carpenter that,

"The nucleus, where it exists, appears to be the chief instrument in the functions of the cell; the cell-membrane having, probably, little else than the mechanical office of bounding or uniting the contents of the cell."—p. 91.

And that the destination of the several forms of cells seems, in great measure, to depend upon the peculiar powers of the

(*a*) Vogel has advanced a similar opinion: "In those completely organized products which, in their perfect condition, no longer retain the cellular form, it is only rarely that any decided cellular formation can be detected during the period of development. Thus in the development of areolar and fibrous tissue, we certainly sometimes find cells which are prolonged into fibrils, but more frequently we meet with mere cytoblast without decided cells, and the blastema appears to be converted directly into fibrils."—*Loc. cit.* p. 128.

nucleus. Some excellent observations, chiefly pathological, have been made on this subject by Mr. Paget(*a*), who believes the existence of the nucleus is always essential to what is commonly called the formative power of the cell, or the organ developed from it. His arguments are founded upon the fact, that "there is no example of development, in either structure or composition, effected in the animal organism by cells which have no nuclei; while there are many instances in which nuclei, whether contained in cells or without them, appear to assume higher forms, or to be centres and sources of formative and reproductive power." This author instances tumours of rapid growth, which are formed, not of cells, but of cytoblasts or nuclei, and that when cells are formed they are not transitional but terminal forms, not giving origin, by further development, to any other structures; and that when the most perfect fibro-cellular and fibrous tissues exist, they appear very certainly to be formed under the influence of cytoblasts alone, cells having no existence in the structure. This agrees with the opinion of Vogel we have just quoted. The great predominance of "naked nuclei" in the early stages of scirrhus may indeed be considered as an established fact.

We may further adduce the researches of Henle, Barry, and Goodsir, as to the importance of the nuclei in the formation of *structure*. The first and earliest of these distinguished microscopic observers, it is well known, named some fibres "nucleus fibres," holding the opinion that they were formed out of the nucleus. Such are those of which elastic tissue is composed, the membraneous coats of blood-vessels, the fibres of involuntary muscle, and some forms of basement membrane. When this latter presents a granular appearance Henle supposes it consists of nuclei of cells, whose development has been arrested; or, according to Dr. Carpenter:

> "In other words, such basement membrane is formed by the consolidation of the layer of the plastic element, that includes a large number of granules, which may serve for the development of new cells."—p. 95.

We must beg leave to dissent from this explanation of Henle's view. Dr. Carpenter has here incorporated Goodsir's researches with those of Henle, who did not contemplate the nuclei as developmental agents in this structure, but merely as mechanical elements. He has also similarly described the coats of the blood-vessels. Here, according to him, we have a

(*a*) Med. Gaz., July 23, 1847, p. 146.

structureless membrane, having imbedded in it rows of elongated nuclei, which appear to appropriate the adjoining strip of the membrane; the result of which is, that the membrane breaks up into a number of flat fibres, each bearing the row of nuclei after which it was modelled. Precisely the same structure holds in organic muscular fibre.

But although Henle considers the epithelial coat of the blood-vessel to be formed of cells growing round the nuclei in the innermost layer of the structureless membrane just described, he does not seem to have had so clear and definite an idea of the function of the nucleus in membranes as our countryman.

In Mr. Goodsir's(*a*) opinion, there is dispersed through the whole organism a vast number of what he terms "centres of nutrition," and elsewhere "germinal centres," and "germinal spots." Dr. Carpenter has frequently used these terms in the present edition; and, in fact, the doctrine of germinal centres is every day becoming more and more probable. By centres of nutrition Mr. Goodsir means "certain minute cellular parts existing in the textures and organs." He makes a distinction between the nutritive centres of the *organs* and of textures. Those of the latter are permanent; those of the former are, for the most part, peculiar to their embryonic stage, and either disappear ultimately, or break up into the various centres of the textures of which the organs are composed. From the consideration of the various phenomena presented by these centres, Mr. Goodsir considers them to be destined "to draw from the capillary vessels, or from other sources, the materials of nutrition, and to distribute them by development to each organ or texture after its kind;" so that, contrary to the old doctrine of nutrition, the replacing of the old materials of the frame is due, not to the ultimate vessels, but to the non-vascular portions of the textures, which have the power of selecting and laying down the materials of growth. The centre of nutrition with which we are most familiar is that from which the whole organism derives its origin, namely, the germinal spot of the ovum. Now as the entire organism is formed at first by the successive development of its parts from this centre, so the various parts arise each from its own centre, this being the original source of all the centres with which the part is ultimately supplied. From all which Mr. Goodsir makes the important inference, "not only that the entire organism consists of simple or developed cells, each having a peculiar independent vitality,

(*a*) Anatomical and Pathological Observations, Edinburgh, p. 1, *et seq.*

but that there is, in addition, a division of the whole into departments, each containing a certain number of simple or developed cells, all of which hold certain relations to one central or capital cell, around which they are grouped." These central cells absorb the materials of nourishment for all those in its territory while in a state of development, and pass them off when fully formed or arrived at that stage when their own powers suffice for their growth. A nutritive centre, anatomically considered, is merely a cell, whose nucleus is the permanent source of successive broods of young cells, which pass off in certain directions, and under various forms, according to the texture or organ of which their parent forms a part. The author of this most ingenious hypothesis has drawn his facts from anatomy, physiology, and pathology. We may take his account of the structure of basement membrane as anatomical proof of his position. Dr. Carpenter has given a slight sketch of this account.

Mr. Goodsir proposes to name this membrane " germinal membrane,"—he holding that it is a fine transparent membrane, having nutritive or germinal centres arranged at equal or variable distances in its substance, so that it consists of cells with their cavities flattened, their walls forming the membrane by cohering at their edges, and their nuclei remaining in its substance as the germinal centres. These membranes are only met with on the free surfaces of the parts or organs, and it is only on the free surface of the membrane that the developed or secondary cells of its germinal spots are attached. When fully developed, the secondary cells carry forward its anterior layer (which is always the thinnest), leaving the nuclei or germinal centres in the substance of the posterior layer in close contact with the blood-vessels. This appears(*a*) the universal arrangement, for in every instance the nucleus is directed towards the source of the nutritive matter, while the cell-wall (in secreting structures) is opposed to the cavity into which the secretion is cast. Barry has made similar observations, and has particularly referred to the peripheral position of the nucleus in the germinal vesicle(*b*) anterior to fecundation. Indeed on this circumstance, coupled with the fact that he has observed, or thought he has observed, a foramen at this point, he has founded the notion, for such we must call it, that the spermatozoon *penetrates* the ovum, and, in the language of

(*a*) *Loc. cit.* p. 33.
(*b*) Philosophical Transactions, 1840, Part 2.

Dr. Carpenter(*a*), that "this act (fecundation) consists in the introduction of some new element into the ovule, through the medium of the spermatozoa." Dr. Carpenter has very easily digested this observation of Barry. Some eminent embryological observers have found it a much tougher morsel. But this is not the only place in his work where our author has proved himself possessed of an easy swallow of any facts which can be made to square with his preconceived ideas. In this place, for instance, the observation quoted has a very pleasing effect upon the mind of the reader, after the remark that the

> "Mysterious process of reproduction evidently consists, in flowering plants, of nothing else than the implantation of a cell-germ prepared by the *male* organs, in a nidus or receptacle adapted to aid its early development; which nidus constitutes the essential part of the *female* system."

Mr. Goodsir's(*b*) account of the structure of lymphatic glands and serous membrane, is equally illustrative of his views of the germinal centres. Lymphatic glands consist of a dense network of lymphatics, among which arteries, nerves, and veins ramify. The lymphatics may be classed according to their relation to the gland, as *afferent*, *efferent*, and *intra-glandular*. An afferent lymphatic consists of an external filamentous tunic, a middle fibrous tunic, and an internal layer of epithelium. But as soon as its branches penetrate the capsule of the gland, they lose their external tunics. In fact, the external tunic of the extra-glandular lymphatics, the afferent and efferent lymphatics, appears to leave them almost entirely at their entrance and exit from the gland. The middle tunic also, for the most part, begins to disappear from these vessels after they have penetrated the capsule of the gland. But not merely do the intra-glandular lymphatics lose the external tunic; their inner tunic, or rather what was the inner tunic of the afferent vessels, also undergoes singular modifications. In the first place it appears so thick and opaque, as with difficulty to allow the vessels to transmit the light, which have then the appearance of being stuffed with a granular matter. When accurately examined, these thickened vessels seem to be possessed of an extremely fine external membrane, and a thick granular substance which lines the membrane. In the substance of the membrane there are arranged, at regular distances, ovoidal bodies, hollow, and containing one or more rounded vesicles in

(*a*) Page 705, par. 900. (*b*) *Loc. cit.* p. 44.

their interior. These bodies form a part of the membrane. The thick granular substance attached to its inner surface is composed entirely of closely packed, nucleated particles of about the $\frac{1}{5000}$ of an inch in diameter. From its thickness it encroaches upon the cavity of the vessel, leaving a comparatively narrow channel for the passage of the lymph and chyle, which channel is rendered somewhat irregular by the granular matter being more exuberant in some spots than in others. Now, it is believed by Mr. Goodsir, that the anatomical relations of the membrane, and its layer of nucleated particles, are identical with those which characterize the primary cells or membrane, and the secondary or secreting cells of certain glands. The oval vesicles in the substance of the membrane are *germinal spots* or *centres of nutrition*, and the membrane is a germinal membrane. And he thinks the spots on the membrane are the sources from which the germs of the nucleated particles of the thick layer are derived; they must, therefore, exert "a force" by which matter is abstracted from the blood of the neighbouring capillaries, for the purpose of developing a steady succession of nucleated particles.

In serous membranes the arrangement of the minute elements of the tissue, though differing considerably from that just described, is equally illustrative of the doctrine of germinal centres. Here there is placed beneath a stratum of nucleated scales, a germinal or basement membrane, consisting of flattened cells elongated in the form of ribbons. The nuclei or germinal spots of these cells are also elongated, bright, and crystalline. On the supposition that these germinal centres are the sources of all the scales of the superficial layer, each centre being the source of all the scales of its own department, then the matter necessary to the formation of these must pass from the capillary vessels to each of the centres, acted on by forces whose centres of action are the germinal spots.

Some of Mr. Goodsir's earliest observations were made on secreting structures and the intestinal villi. In his last edition, Doctor Carpenter gave an account of the minute anatomy and physiology of the latter, with which, indeed, every tyro in physiology is now acquainted. In the present edition we find a distinct chapter on "Absorption and Sanguification," in which this subject(*a*) is included, along with the entire subject of the "Elaboration of the Nutrient Material;" and we must state our conviction, that it is one of the most important and valuable

(*a*) The structure of the intestinal villi will be found more fully treated of in the chapter on the primary tissues, page 132.

chapters in the Treatise. We shall do no more than allude to the facts that the intestinal villi possess a layer of germinal membrane under the epithelial covering; that in this membrane there are germinal centres of an oval form, at pretty regular distances, from which the epithelium appears to be reproduced. We may add, that the cells surrounding the lacteals, and which are the active agents of absorption, are produced from the vesicular extremity, or primitive nutritive centre of the villus, which itself originates in a cell. During the development of the villus, this spot or cell was employed only in effecting the growth of the organ. In the perfect animal, the formative function of the spot ceases; its action then becomes periodical,—active only during digestion.

Dr. Carpenter tells us that

"It is thought by Professor E. Weber, that the epithelial cells which cover the villus perform a preliminary office; the nutrient matter being first absorbed, and partially prepared by them; and then, being drawn through the basement membrane of the villus, into the special absorbent cells which form part of its substance. This seems the more likely, as we shall hereafter find that the epithelial cells of the placental tufts appear to perform a like function." —p. 513.

We were somewhat unprepared for this statement of Dr. Carpenter's, that Weber's opinion was "*likely*." The analogy mentioned is certainly a very loose one. Can he have forgotten that the casting off of the epithelium is a necessary preliminary to the special act of absorption, as mentioned by Goodsir(*a*)? We find at an early part of the Treatise, a plan of the intestinal villi, one of which has been delineated naked, or destitute of epithelium. Our author appears, therefore, to have been aware of this condition; but on this supposition we confess our inability to explain the paragraph quoted.

But it is in secreting structures(*b*) we observe most remarkably the physiological importance of the *nuclei*, or germinal spots. Not only are they the sources of the cells in which the secretion is contained, but there appears excellent reason for thinking they are the great agents of secretion. In all Mr. Goodsir's observations the secretion was observed in *nucleated* cells. In the liver of patella vulgata the bile is contained in the cavities of the secondary cells, which constitute the nucleus of the primary cell. In the fatty degeneration of the liver, first and

(*a*) *Loc. cit.* p. 9.
(*b*) See Carpenter, p. 633; Goodsir, p. 20, *et seq.*

so well described by Bowman, the nucleus disappears, while the cell becomes filled with drops of oil. Perhaps, as Paget has suggested, it may itself be transformed into the largest of the drops. There is an entire absence of the bile in the cells exhibiting this condition. The wall of the cell is unaltered in these cases. Further proof may be derived from Mr. Simon's investigations on glands without ducts, where a wide extent of gland function appears to be performed principally or entirely by cytoblasts, which renders it almost certain that these latter are the great agents in the elaboration of secretions(*a*). The secretion contained in the cavity of the cell appears, as Mr. Goodsir has stated it, to be the product of the solution of successive developments of the nucleus, which, in some instances, contains in its component vesicles the peculiar secretion (as in the bile-cells of the mollusc just alluded to), and in others becomes developed into the secretion itself, as in the seminal cells. This last remarkable phenomenon has been made the subject of observation by the brothers Goodsir, more especially by Mr. H. Goodsir, who has very minutely examined the seminal secretion in the decapodous crustaceans. These researches prove that the spermatozoa are derived from the *nuclei* of the secondary cells, and agree, with great accuracy, with the observation of Kölliker, that these bodies arise in the vesicular nuclei. We must refer to the original papers of Mr. Goodsir, or to Dr. Carpenter's treatise (which comprises a very exact account of these researches), for further illustrations of the anatomical and physiological importance of the nucleus and of the doctrine of "nutritive centres." We would especially refer to those parts of the latter work treating of the structure of epithelium, the placenta, and the glandular system.

In a different domain, that of pathology, we find equally clear proofs of the important part taken by the nuclei. In the cyst of a meliceritous tumour Goodsir(*b*) has found a germinal membrane with its germinal spots, whose function is to attract from the neighbouring capillaries materials for the growth of the internal cellular mass. The mass itself consists of cells, each having its own nucleus or germinal centre. The most external layer consists of flat cells about to close their existence, their nuclei having disappeared. In the fatty heart it is certain that, concurrent with the first appearance of fatty matter within the sarcolemena of the degenerated fibres, the out-

(*a*) Mr. Paget's fifth lecture in the Medical Gazette, already referred to, contains many interesting observations on the functions of the nucleus.

(*b*) *Loc. cit.* p. 108.

line of the nuclei becomes dim, and they lose their natural reddish yellow colour. In a more advanced stage the nucleus of the fibre cannot be seen at all ; "its former place is indicated, if at all, only by some out of the narrow columns of yellow granules,"(*a*) which are always seen, in the healthy state of the fibre, at the ends of the nuclei. At a later stage, when the sarcolemena appears nearly full of fatty particles, all trace of both the nucleus and these granules is lost. Here the sarcolemena is unaltered, as we found in the secreting cells the cell-wall unaltered. Though, therefore, we cannot prove, as beyond a doubt, that it is the failure of the nucleus which brings about the degeneration of the cell or fibre, the invariable concurrence of these two changes, and the frequent existence of instances in which the nucleus appears pale and fading before any fat is deposited in the cell, lead us to the conclusion suggested by Mr. Paget, that "it will be very strange if we do not before long find enough to prove that the defect of the nucleus is the *first defect*, and the essential condition of the disease."

Thus the nucleus is not, as imagined by Schleiden, "cast off as useless," or absorbed after giving origin to the cell-membrance; on the contrary, it has only commenced the fulfilment of its great destiny, which is simply to be the great formative and reproductive agent of the whole economy. And equally subservient is it to morbid processes, the characteristic element of a great number of which is, the development of nuclei and nucleated cells. If we carry our view still higher, and investigate the origin, the primal condition of the animal structure, we see, in the picturesque language of Barry, that "the rudimental embryo is the nucleus of a cell."

In his account of the central terminations of the nerves, Dr. Carpenter still adheres to the old view, that they end by loops, while he admits "some of the nerve-fibres appear to originate from the filamentous prolongations of certain ganglionic cells." Late researches have rendered it probable that this latter is the *only* mode of termination. Among these we may particularly refer to the observations made on the connexion of the nerve-fibres with the large vesicles of the ganglia on the posterior roots of the spinal nerves in some of the ray and shark families, and in the electric lobe of the torpedo (Harless). Here the external wall of the nerve vesicle is continuous with the neurilemnal tube of the nerve; and in the torpedo Harless has traced the fine internal part of the nerve into the nucleus

(*a*) Mr. Paget, *loc. cit.* p. 144.

of the internal cell, with which, he stated, it appeared to have sometimes *two* connecting fibres. The phenomena of the early development of the nervous system have been lately studied by Kölliker(*a*) and Schaffner, and have supplied additional evidence confirmatory of this view. In the earliest period of its formation nerve-substance consists almost entirely of roundish, mostly nucleated cells, filled with a finely granular material, and differing only from the nerve corpuscles of the adult animal in being smaller. As the development proceeds, but previous to the appearance of distinct nerve fibres, many of these cells send forth fine tubular processes, which unite with similar processes from other cells, and thus, in time, give rise to continuous nerve-tubules. In young batrachians a complete net-work has been observed to be formed in this way by the coalescence of the processes from branching cells. As the nerve tubules coalesce and increase in size, the walls of the cells from which they originate are gradually drawn out, and merge into those of the tubules, while their granular contents also become continuous and identified with the contents of the tubules (Schaffner). This agrees very exactly with the conjecture of Todd and Bowman(*b*), that "the processes of the caudate vesicle may, after passing some way, become invested by the tubular membrane and by the white substance of Schwann." The inference appears almost irresistible, that these fine radiating processes are of the same nature with the fine or pale fibres.

We think Dr. Carpenter has spoken more positively than the extent of our knowledge justifies about the *peripheral* terminations of the nerves by a series of loops. It has been lately observed that in the muscles of the frog the nerve tubes do not, as previously supposed, form loops at their terminations, but that beyond these so-called terminal loops minute ramified fibres extend, which seem at last to pierce the sarcolemmal tube, and are lost to view among the sarcal fibrillæ. In some membranous parts a similar arrangement has been remarked.

"In the membraneous septa which cross the pillars of the electrical organs of the torpedo, the nerves, which are numerous and large, were at first supposed to end by plexus or reticulation; but here, and in the analogous organ discovered by Stark in the tail of the skate, a minute examination shows that the nerve tubes divide into much finer fibres, which are lost in the spaces between the network of tubes."(*c*)

(*a*) See Supplement to Müller's Physiology, p. 124.
(*b*) Physiological Anatomy of Man, p. 225.
(*c*) Outlines of Physiology, by Professor Allen Thomson, p. 153.

In the papillæ of the human tongue it is quite certain that the nerves end in loops of fibres, much finer than the tubular fibres composing the trunk and principal branches of the nerves. Other facts might be adduced to show the necessity of considerable caution in coming to a precise conclusion as to the peripheral terminations of the nerve-fibres, but these brief observations quite suffice to prove the importance of waiting for further investigation on this point.

We intended to discuss many more parts of the treatise before us. The chapter on "Absorption and Sanguification" teems with novel and interesting matter, upon the consideration of which want of space prevents our entering. In leaving our author we must state our opinion, that it is by far the most excellent treatise for the student we possess. While it contains all the newest discoveries in the respective subjects of which it treats, and which are admirably incorporated with our previous knowledge, every part of the work is characterized by an essentially practical tendency, the prime merit of a physiological treatise for the student.

We congratulate the Profession that the Cyclopædia of Anatomy and Physiology is progressing so rapidly that we may fairly consider its early completion a matter of certainty. Two numbers within three months, and a third within a couple of months of the last of these, have almost made us forget the slowness of the earlier Parts. This has been the only complaint against the distinguished Editor, and it has always struck us as being more of the nature of a compliment than the contrary. Dr. Todd has indeed very little to complain of in the way of criticism. All the ordinary praises of the reviewers have been bestowed so lavishly on the design and execution of this great work, that it has left nothing more for us to do than merely to *announce* the later Parts. We have great pleasure in placing at the head of this article the three last Parts, XXXI, XXXII. and XXXIII. We can give them no higher praise than that they sustain the character of those that have preceded them. The first of the three Parts contains the conclusion of Dr. Walshe's article on Adventitious Products. Like everything from the pen of that author, it is of high merit; though we must reluctantly confess we are not quite satisfied with this, as the *pronunciamento* of British pathology. There is scarcely a part of the article that does not leave a certain indefiniteness on the mind of the reader, very painful to one seeking precise information, and by no means flattering to the perspicuity of the author. We find Dr. Walshe observing in the first paragraphs of the article that the micro-

scope has rather tended to render confused and complicated the whole subject of pathology. It has obviously had this effect on his own mind. There is certainly a great jumbling of microscopic appearances and corresponding phrases on the one hand, and what he somewhat grotesquely terms "naked eye characters," and their obsolete phraseology, on the other, in the article before us. The section on Cancer is very far below the author's reputation. It would be difficult to imagine a more illogical and unscientific classification of the ultimate elements of cancerous growths than that given to us by Dr. Walshe,—"essential, *almost essential,* and merely contingent." Upon a little consideration, the phrase "almost essential" appears peculiarly absurd. An essence is a something, without which the thing of which it is said to be the essence cannot exist. The moment this latter takes place without the co-existence of the former, the essence remains no longer as such. An essential character is not produced by mere frequency, it is a *sine quâ non.* Pathology does not possess many "essential characters." A very frequent concurring circumstance does by no means become almost an essential character from the fact of its frequency. Essences admit of no gradation, no shading off. Anything not invariable and of necessity cannot be placed, in any degree, in the same category with them. We may just as philosophically speak of a thing being *almost a cause* of any other thing. Dr. Walshe considers fat as an almost essential element of cancer; because cancer has a great disposition to arise in organs of which fat is a main element? This is not even mentioned in the section; because cancer is in its very early stages associated with fatty globules and granules?—This is not pretended for an instant. But because "it has a tendency to be produced wherever cancer exists"! Is therefore inflammation an "almost essential element" of pulmonary tubercle, because it has a tendency to be produced under these circumstances? The whole paragraph on fat, in its relation to cancer, is extremely unsatisfactory. Its important relation in a curative point of view is not even alluded to, in spite of the well-known observations of Rokitansky on the spontaneous cure of cancer by a process of saponification.

In the section on Vegetable Parasites, Dr. Walshe treats, among others, of the remarkable vegetations of porrigo favosa, of which he gives a very good description. It is stated, that "attempts to propagate favus by inoculation of the sporules, the matter of the crust, and the fluid of the pustules, have failed (Gruby, Bennett);" from which it is attempted to be proved that the parasite is incapable of germinating except in

a special soil, and that the production of this soil constitutes the *essence* of the disease. Now, unfortunately, the latter pathologist quoted by Dr. Walshe has perfectly succeeded in inoculating a healthy gentleman of our acquaintance, a fact which, indeed, we thought the pathological world pretty well knew, and thus proved Dr. Walshe's "special soil of amorphous exudation-matter" not to be *the essence* of the disease; while the number of unsuccessful experiments proves the importance of the special constitutional state and "special soil." But this is quite another question.

We can particularly recommend to our readers the next article, on the Prostate Gland, by Mr. Adams, of the London Hospital, as being a clear account of the anatomical relations and structure of this organ. Under the head of Prostatic Concretions there is a very interesting description of some bodies only recently discovered. The original observations were made by Dr. Handfield Jones and Mr. Quekett. From the researches of these gentlemen it appears that these concretions are of extremely frequent occurrence, so much so, that the latter observer considers them "to be a part of the natural constituents of the gland or its secretion." We have examined them several times ourselves, and can testify to the truth of this assertion. They are formed within the follicles of the gland, and would seem to commence by a deposit of earthy matter in its secreting cells. They are, for the most part, of a finely mottled, deep yellow colour; ranging from $\frac{1}{600}$ to $\frac{1}{1000}$ of an inch in diameter. Their increase in size appears produced either by aggregation or by deposition in the form of concentric layers unequally developed; in the former case they mould themselves to the follicles, in the latter they present the appearance of an ordinary lithic acid calculus (Quekett). The latter is certainly much the more common mode of increase; the yellow concentric layers around a central nucleus being the characteristic form of the concretions, as we have observed them. Their chemical composition varies at different stages of their development, consisting at first of little else than animal matter, but afterwards acquiring calcareous salts, stated by Dr. Prout to be phosphate, with a little carbonate of lime. It is the opinion of Dr. H. Jones that these concretions undergo an early solution; yielding up their granular or amorphous contents to form a part of the secretion of the gland. But if they are not removed in this manner they become the nuclei of prostatic calculi. Here, as in so many other parts of our science, the microscope has given us important aid in strictly practical inquiries.

The Thirty-first Part before us contains several other excellent articles, which we can do no more than simply enumerate. They are: "Protein," by Mr. J. Bowman; "Pteropoda," by Mr. Rymer Jones; "Pulse," by Dr. Guy; "Quadrumana," an elaborate and most valuable article by Professor W. Vrolik of Amsterdam; "Radial Artery," and "Radio-ulnar Articulations," by Mr. W. Brinton; and "Ren" (which, we beg to inform our readers, means renal organs), by Dr. G. Johnson, of King's College. This last article is only commenced in this Part, and is concluded in No. XXXII. The author has divided it into three sections: the first treating of the comparative anatomy of the organ; the second, of its anatomy and physiology in the human subject; and the third, of its pathology. Dr. Johnson has not added to our previous knowledge of the subjects discussed in the first two sections; though we give him all praise for the lucid description of the organ in the human subject. Especially we would recommend to our readers the admirable description of the fibro-cellular matrix of the kidney, in which he has chiefly followed Mr. Goodsir's(*a*) views. There cannot be a doubt that the want of accurate knowledge respecting this structure, and its precise arrangement, has been, as hinted by Dr. Johnson, a fertile source of the discrepancy in the several accounts by recent writers of the minute anatomy and pathology of this organ. We may also allude to the very careful description of the Malpighian bodies, in which will be found a discussion of the various opinions respecting their exact relation to the tubuli uriniferi. Dr. Johnson has for the most part given his adherence to Mr. Bowman's doctrines, of whose illustrations, too, he has very freely availed himself.

But it is in the third section, treating of the pathology of the kidney, that Dr. Johnson has given us some novel views of great interest. To this subject he has paid great attention, and has only recently favoured the profession with some valuable papers on this, one of the most obscure topics in pathology. Our limits will not permit us to enter upon the consideration of this section, at present; but this, with Dr. Gairdner's conclusive researches, together with other essays bearing on the same point, we hope to discuss as fully in a future Number as the importance of their matter deserves.

The next article in the Thirty-second Part is "Reptilia," by Professor Rymer Jones, whose contributions to the comparative anatomy department of the Cyclopædia form one of its most

(*a*) Edinburgh Monthly Journal of Medical Science, May, 1842.

interesting features. This part is concluded by a truly philosophical and learned article on "Respiration," by Dr. John Reid, which is finished in the next Number. We may already predict that it will be our standard authority on the subject. Part XXXIII. likewise contains the articles "Rodentia," by Mr. Rymer Jones; "Rotifera," by Dr. Lankester; "Saliva," by Dr. Owen Rees; "Salivary Glands," by Mr. Ward; "Scapular Region," by Dr. Benjamin M'Dowell, of the Richmond School, Dublin; "Scrotum," by Mr. Brinton; and "Secretion," by Dr. Carpenter.

Principles of Medicine, comprising general Pathology and Therapeutics, and a brief general View of Etiology, Nosology, Semeiology, Diagnosis, Prognosis, and Hygienics. By Charles J. B. Williams, M. D., F. R. S., &c. Second edition, considerably enlarged. London, Churchill. 1848. 1 vol. 8vo. pp. 533.

A Treatise on the Practice of Medicine. By George B. Wood, M. D., Professor of Materia Medica and Pharmacy in the University of Pennsylvania. Philadelphia, Grigg, Elliott, & Co. 1847. 2 vols. 8vo., pp. 791 and 840.

A Dictionary of Practical Medicine. By James Copland, M. D., &c. London, Longman. 1848. Part XIII., "*Poisons*" *to* "*Rabies.*"

Methodus Medendi, or the Description and Treatment of the principal Diseases incident to the Human Frame. By Henry M'Cormac, M. D., Professor of the Theory and Practice of Medicine in the Royal Belfast Institution. London, Longmans. 1842. 1 vol. 8vo. pp. 574.

While the English language abounds in excellent monographs on special diseases, a general work on the practice of medicine, to which the physician could refer with confidence as a guide in the difficulties by which he is often beset in the practice of his profession, has long been a desideratum. We have our Cyclopædia and our Library of Practical Medicine,—works, it is true, which shed lustre on medical literature,—but the various subjects treated of having been the labour of different writers, they are, taken as a whole, of necessity, unequal, and can only be regarded at best as a collection of essays. To this, of course, no objection could be made, were the authors all equally eminent; but while most of the contributors were physicians of

the very highest character and experience, some amongst them were not only unknown to fame, but, to judge from their writings, had not a sufficient amount of experience to enable them to decide on the value of the theoretical doctrines they propounded.

In a late Number of our Journal we have put upon record the high estimation in which we hold Dr. Copland's Dictionary, and we may now again express the pleasure with which we find an additional part, after so comparatively short a period, on our library table. His book is, indeed, a monument of labour, of industry, and of talent; written by a single individual, it is also free from at least one of the objections we have raised to the other great British works on practical medicine; but it has one great defect,—voluminousness. As a systematic treatise, deserving the careful perusal of every student and junior practitioner, we believe it to be unrivalled. The physician, however, engaged in the active practice of his profession, whether in private or in public life, requires a certain amount of conciseness in the volume to which he wishes constantly to refer: he cannot afford to wade through page after page of the history of disease, and of the opinions of the most celebrated authors, from Hippocrates to his own time, on pathology and treatment.

There are, indeed, almost insuperable difficulties to be overcome in writing a treatise on the practice of medicine suited to the wants of the practising physician,—completeness combined with conciseness,—clearness of arrangement with accuracy of detail,—a sufficient exposition of the science of medicine, with a full account of the results of experience,—are but a few of the necessary foundations on which such a book should be based. Moreover, how rarely do we find a physician of such general information, and with a mind so constituted, as to attain a knowledge of all the diseases to which the human frame is liable, sufficient to enable him to write a complete system of the healing art. Physicians more frequently devote themselves to the study of some special disease, or some class of diseases, and hence it is that our literature is so rich in valuable medical monographs. In addition to the knowledge, experience, and learning necessary, such a task also requires an extraordinary amount of confidence: to come forward as the teacher of an art, the difficulty of attaining even a slight acquaintance with which compelled the great father of physic to mourn over the brevity of life.

Instead, then, of wondering that a work on the Practice of Medicine, calculated in all respects to meet the wants of the

physician, has not been hitherto published, we should rather be astonished at the great ability and learning of many of those we at present possess. One other defect in many of them we cannot, however, avoid adverting to. For many reasons, treatises on the practice of medicine have been written most generally by those who have delivered lectures on the subject; and their writings, consequently, contain much merely elementary matter, which, however well-suited for the instruction of the student, is altogether out of place in a book of reference for the practitioner. This is more especially true as regards those works which purport to be composed of the author's lectures as delivered to his class, and for the incompleteness and elementary character of which the excuse is so generally offered of the nature of the audience for which they were originally intended. The easy, flowing style of such publications too often gives them a degree of estimation with the public much higher than their intrinsic merits deserve; and it is only when they come to be referred to as guides in some difficult point in the diagnosis or treatment of disease that their real value is found out. Of course, we do not include in this condemnation books consisting of lectures, which, delivered early in his professional career, the author has revised, probably re-written, after years of practice have matured his views and tested them by experience, before he gives them to the profession.

The recent rapid advancements in physiology and pathology have been of such a character as to cause an almost complete revolution in the doctrines on which the indications of treatment of several most important diseases have been hitherto based. While the principles of medicine have been rapidly undergoing change, the science of therapeutics, if it has not remained altogether stationary, has improved but very slowly, and this of necessity, for the latter depends so intimately on the former, that to render the results of experience of aught avail, they must be obtained from observations made on correct principles. We are, therefore, at present, arrived at a peculiar era in the healing art: general and special pathology have attained a degree of certainty, as extraordinary for the rapidity with which it has been acquired as for its perfection, yet the ultimate aim of all investigations in medicine,—the application of the results obtained to the prevention and treatment of disease,—is yet in its infancy, and offers a rich harvest to the diligent cultivator.

We have had no more careful inquirer into the truth of the new doctrines of pathology, and no more careful observer, than Dr. Williams, the second edition of whose work on the

Principles of Medicine is now before us. He has done excellent service to the profession in embodying in this volume a complete view of the elements of general pathology,—*of those general principles in the nature and treatment of diseases which are really fundamental in the practice of medicine.* As the first edition of his work was but very shortly noticed in the former series of our Journal, and as numerous and important additions have been made to the second, we purpose to call the attention of our readers a little more at length to some of the important doctrines contained in it.

By the *principles of medicine* we understand an account of all those alterations in nature, whether occurring in the component parts of the human body, or extrinsic to it, that may affect the prevention, occurrence, or treatment of every deviation from a state of health. It is evident, then, that if this definition be correct, the subject is one of very great extent, and the necessity of an intimate acquaintance with, at least, its leading doctrines, cannot be too strongly impressed on the student and practitioner of medicine.

Having defined his subject in a short introduction, Dr. Williams, in the first chapter, treats of Etiology, or the causes of diseases, under the division of predisposing and exciting, correctly excluding from consideration under this head the so-called *proximate* cause of disease, which, stamped with Cullen's authority, a very large portion of the profession, who look upon disease as merely an aggregation of symptoms, still describe as one of its causes, inasmuch as on it depend symptoms,—while, in reality, it is the very essential of disease. With this view Dr. Wood, of Philadelphia, whose extensive work on practical medicine, the title of which we have prefixed, may be looked upon as an exponent of the doctrines of the modern American school, concurs.

Under the section "non-cognizable agents," are included endemic, epidemic, and infectious causes of disease. As regards the two latter, especially, much difference of opinion has always existed in the profession. Where to draw the line of demarcation between epidemic and infectious diseases is the great difficulty. (We think it would be better, and conduce to a simplification of the subject, if the profession would agree to consider *infection* and *contagion* as synonymous terms.) Just at present, when we are threatened with a visitation of cholera, the question is again sure to become a matter of controversial discussion, for, probably, with regard to no other disease are opinions so much divided. This is, indeed, already the case; for while we write a document has

appeared from the Irish Board of Health, which sets out with the assumption of cholera not being infectious. We do not mean to take up the consideration of this doctrine just here, but we cannot avoid expressing our opinion that the assumption is, to say the least of it, a bold one, with such evidence in existence as that adduced by Dr. Graves in the second edition of his Clinical Lectures, and continued in an original article in our present Number. Dr. Williams takes, we think, the most correct view of the subject, in believing that typhus fever, plague, cholera, and dysentery, may originate and spread both by infection and as epidemics. Even influenza, which must be regarded as the type of an epidemic disease,—overshadowing the earth like a cloud, as it has at all times invariably done,—we have known to evince an infectious character under certain circumstances.

The whole question of the causation of disease by this class of agents, is one of much difficulty, and requiring careful investigation. Even the production of *endemic* diseases is involved in much obscurity. How can the existence of the peculiarly destructive fever of Western Africa, and its restriction to that part of the world, be accounted for: physical circumstances precisely similar—so far, at least, as human knowledge can discover—to those on which it is supposed to depend, existing in many parts of the continent of South America and in the island of Borneo? How singularly permanent, too, is the impression made by malaria on the system. What a length of time does it take to get rid of the poisonous influence, and how readily is the morbid change reproduced by exposure to causes which would make no impression on a healthy individual. The inquiry is one of much practical importance, and can only be satisfactorily carried out by a lengthened series of investigations concurrently made by properly qualified observers in various parts of the world.

Dr. Williams proceeds, in his second chapter, to consider the nature and constitution of disease,—pathology proper. Of functional or dynamic diseases he describes, first, the *primary elements of disease*, that is, the condition of the primary constituents of the body; and secondly, the *proximate or secondary elements of disease*, the state of the vascular system and the nutrient function, both of which comprise two or more of the primary elements. Of the former, diseased states of secretion and of the constituents of the blood are among the most important. He agrees with Dumas and Liebig in believing that the chief secretions take place by the agency of chemical affinities, but controlled by vital influence. We cannot see

what necessity exists for this admission of chemical action as influencing the natural processes that take place in the living body,—this mixing up of a mechanical with a vital power. The power of secretion is now believed by physiologists to be a vital endowment of the ultimate cells or molecules of secreting structures; and this re-admission of the agency of chemical affinity can in no wise tend to a clearer elucidation of the subject, and may lead to a furtherance of those erroneous views in therapeutics which were the offspring of the Liebig school of chemical physicians.

The importance of a knowledge of the changes in secretion, as an element in disease, is evident from the variety and extent of the process in all animated beings. It is thus that matters which, if left in the system, would prove poisonous, are not only got rid of, but in some instances, while being removed, are employed by nature as useful agents: for example, the use of the bile in promoting the digestion of fatty substances, and in facilitating the healthy operations of the intestinal canal. The author considers the state of secretion, as it may be excessive, defective, and perverted. Excessive secretion of any kind may weaken, by acting as a drain on the system; it may also act *forwards*, as excessive secretion of bile, in causing diarrhœa; and *backwards*, by the effect produced on the organ which secretes, and on the blood from which it is secreted. A perversion of any secretion may accompany either its excess or deficiency; or existing *per se* is often a cause of disease. Examples of this are too familiar to need mention. It must be borne in mind, that any alteration from a healthy state of secretion affects *nutrition*.

The diseases of the *constituents* of the blood are also considered as depending on excess, deficiency, or alteration. As regards the proportions of the various constituents of the blood, Dr. Williams follows the statements of Lecanu, as adopted by Andral and Gavarret; but the more recent investigations of Becquerel and Rodier are, we think, more to be depended on, and differ from the former. According to the latter chemists, the mean composition of healthy blood, as deduced from eleven individuals, is, in 1000 parts: water, 779; globules, 141·1; albumen, 69·4; fibrin, 2·2; extractive matter and free salts, 6·8; fatty matters, 1·600(*a*).

The red blood discs being those on which the vivifying and

(*a*) *Recherches sur la Composition du Sang dans l'Etat de Santé et dans l'Etat de Maladie.* Par A. Becquerel et A. Rodier. Paris, 1844. Part I. p. 22.

calorific properties are believed to depend, their excess manifestly must be productive of general excitement of the vital properties. It is therefore indicative of inflammatory affections, fevers, diseases of plethora, and hemorrhage before it has become excessive. A simple test for this state of the vital fluid is given by the author,—the fine deep crimson which a thin film of blood gives on a white plate. A deficiency of the red particles occurs in, and is indicative of an opposite state of the system; it is readily detected by the pinkish or light purplish hue of a film of blood on a white plate. Altered states of the red particles are indicated both by the colour of the blood and the change in the form of the corpuscles, as seen with the microscope. The former is well exemplified in chlorosis, various cachectic affections, and diseases of the spleen; the latter, in congestive typhoid diseases, and in albuminuria. It is well known that in fluids of greater or less density than serum, they undergo alterations which are due to the processes of exosmosis and endosmosis.

The effects of diseased spleen in promoting the decay and retarding the formation of the red particles of the blood, are well explained by Dr. Williams. He believes it to operate not only by withdrawing an undue portion of the blood from the circulation, keeping it in a stagnant state, and thereby rendering it unfit for further use, but from the action of this *spoiled* blood, as a poison to the whole mass, when, after lapse of time, and under certain changes, it may again return into the general circulation, inducing those various kinds of cachemia or cachexia which follow malarious diseases.

The quantity and character of the fibrin in the blood have at all times been very generally employed by physicians as an important aid in diagnosing disease, it being the element of that fluid to which coagulation is due. It is always in excess in asthenic diseases, and in those of a true inflammatory character; in such, too, it coagulates slowly, contracting and separating from the red particles, thus producing the buffing and cupping of inflammatory blood. In tuberculous diseases, in which the red particles are deficient, it has been noticed by Andral and Gavarret, and confirmed by Becquerel and Rodier, that the fibrin is in excess. Deficiency of fibrin occurs in many diseases; and as venous blood contains less of this constituent than arterial, it is diminished in those affections in which venous blood predominates, as in asphyxia, impeded respiration from any cause, cyanosis, &c. Blood in which the fibrin is deficient is recognised by its fluidity when drawn from a vein, and by imperfect coagulation. Under such circumstances there exists

a tendency to asthenic hemorrhages, wounds do not heal readily, and fractures do not unite.

Why defect of fibrin should cause a tendency to hemorrhages, is believed by Dr. Williams to depend on want of spissitude in the blood; this being required for its favourable transit through the hydraulic apparatus of the circulation, want of that condition may give rise to various irregularities in its distribution. He is also of opinion that the various unnatural sounds or murmurs which in certain diseases are to be heard in the heart, arteries, and veins, may depend on this cause, thin blood being easily thrown into sonorous vibration.

The albuminous principle which is dissolved in the serum of the blood is generally believed to afford the material from which the fibrin (blood plasma) is elaborated. According to Dr. Williams, it is in excess in the active stages of most inflammations and fevers; but the experiments of Becquerel and Rodier give an opposite result, the albumen being slightly diminished in ephemeral fevers, and remarkably so in the phlegmasiæ(*a*). It is most remarkably deficient in disease of the kidney, with coagulable urine. Our author states that albumen is the principle least affected in its proportions by disease.

The oil, or fatty matter of the blood, is sometimes in excess; but this can scarcely be looked upon as an element of disease, inasmuch as it has been only noticed in connexion with a tendency to general obesity: deficiency of this constituent has not been observed.

The amount of saline matter in the blood received much attention when cholera first visited Europe. It was proved by the investigations of Dr. Stevens, Dr. O'Shaughnessy, and others, that these constituents of the blood were deficient in this disease; and they thus accounted for the obstructed circulation, lividity, and collapse: the water of the blood being also deficient. There can be no doubt but the injection of saline solutions into the veins temporarily checked these frightful symptoms; but this treatment was too purely chemical, remedying the immediate evil, but not removing the cause, and, consequently, the same state was rapidly reproduced by the excessive evacuations from the stomach and bowels. We cannot avoid thinking, therefore, that, in the advanced stages, the use of saline injections into the veins, combined with Dr. Graves' acetate of lead and opium treatment, holds out the best hopes of proving successful: in the early stage we would have no hesitation in trusting to Dr. Graves' plan alone.

(*a*) *Op. cit.* pp. 75, 77.

Dr. Williams next passes in review the changes produced in the blood by respiration, by excretion, from the transformation of chyle and of the textures, and from the presence of foreign matters; and then proceeds to speak of the proximate elements of disease, first considering the blood in circulation, as it may be defective—anæmia; excessive—hyperæmia; and perverted—cachæmia.

Under the second of these heads, inflammation is described. It is defined as "excess of blood in a part, with motion (of that blood) increased, and partly diminished." By this definition the author means to express his view of the true nature of this important pathological change, viz.: that there is increased action, and, consequently, increased flow of blood, in the arteries leading to an inflamed part, while there is stagnation of blood in the capillaries and minute blood-vessels: a view that recent investigations and his own premises scarcely warrant, as we shall just now show. We think he is much more correct in the conclusion to which he comes, that the causes predisposing to inflammation are circumstances chiefly affecting the vascular system.

It is not our intention to enter into any argument on the nature of inflammation, a subject which has of late years, and more especially since microscopic investigation has become so universal in physiological inquiries, caused so much difference of opinion. Dr. Williams, we think, devotes too much space in a work on the principles of medicines to a purely physiological discussion, and we are not inclined to follow him; but we cannot permit his opinions on, probably, the most important practical part of the inquiry—the state of the capillary system in inflammation—to pass unquestioned. In his opinion the capillaries of an inflamed part have no share in causing the determination of blood which exists there, and which is one of the first manifest results of inflammation; this he believes to depend on increased action in the arteries leading to the part in connexion with the *vis a tergo* power of the heart. He seems to exclude altogether the *capillary power*, looking upon the enlargement of the capillaries as passive, caused by the expending of the circulating force conveyed by the arteries (p. 266). The whole question of the capillary circulation has been well considered by Dr. Graves, and also its important bearing on the treatment of inflammation(*a*). He believes the capillaries to have the initiative in inflammation, that "with them

(*a*) Clinical Lectures on the Practice of Medicine, edited by Dr. Neligan, Dublin, 1848, vol. i. p. 52.

commences the enlargement which afterwards extends to the smaller arteries, and from these to the larger branches"(*a*). His views are corroborated by the proofs brought forward by Carpenter(*b*); and that they are the true exposition of the change produced by inflammation in the local blood-vessels we have no doubt. The practical bearing of the question, as regards treatment, is too obvious to require observation.

We may here remark, that in the first volume of Dr. Wood's treatise a short article on the pathology of inflammation will be found; it is clearly and well written, and gives a concise and accurate view of the recent doctrines, and the results which may be looked upon as best established.

The fourth chapter of Dr. Williams' work is devoted to the consideration of structural diseases, or diseases of nutrition, full details of which are not given, the author conceiving that they belong rather to the department of morbid anatomy; but the chief forms of structural disease are "traced through the alterations in the function of nutrition which produce them." Under this head he treats of increased nutrition—hypertrophy; diminished nutrition—atrophy, and perverted nutrition, including induration and softening, transformation of textures, various deposits and morbid growths, concluding with an account of the disorders of mechanism.

The classification, symptoms, and distinction of diseases, constitute the matter of inquiry in the fifth chapter. We have in the last volume of our Journal (pp. 30 and 433) put upon record our opinion as to nosological classifications and definitions of diseases; and we are glad to find that Dr. Williams agrees with us as to the practical disadvantage of a symptomatic nosology. He admits the difficulty of forming a nosological arrangement founded on pathology, the natural basis, in the present incompleteness of our knowledge; but he thinks that it may be made subservient "to establish those divisions or subdivisions in which the character of its elements affords an obvious and natural means of distinction." He would thus divide diseases into *classes*, with regard to the organ or set of organs engaged, making a separate class of those diseases, such as fevers, which affect the system generally. In the division of these classes into *orders*, the pathology, or intimate nature of the disease, is to be taken into account; we would thus have diseases of function, of secretion, of nutrition, &c.: and a still further division into *genera* and *species* is made according to

(*a*) *Op. cit.* vol. i. p. 73.
(*b*) Treatise on Physiology, third edition, p. 568.

the precise anatomical seat of the affection. Our author illustrates this arrangement by taking as a *class*, diseases of the respiratory organs, of which an *order* would be functional affections; a *genus*, irritability; and the *species*, spasm and paralysis of the larynx, bronchi, &c. As regards general diseases, the subdivisions must depend on some pathological peculiarity; for example, fevers may be subdivided into inflammatory, eruptive, &c., and contagious, malarious, &c.

A classification of this nature we have been in the habit of employing for some years in our lectures, and of its great practical utility we are fully convinced. We also think that it forms a more intimate connexion between pathology and practice of medicine than any other that has been hitherto proposed; and while it brings prominently forward the great features of distinction between affections of different organs, the intimate nature of disease is not lost sight of.

The next section on Semeiology and Diagnosis is of much value; but as the author does not appear to have made any additions to it in this edition, we merely mention it to recommend it to the careful attention of the reader. The same remark applies to the sixth chapter, in which prognosis—foreknowledge of the results of disease—is made the subject of inquiry. This chapter contains a very complete description of the chief varieties of the modes of death, with an account of those symptoms which may become available as prognostic signs of the approach of dissolution.

The prevention of disease, which is treated of in the seventh and last chapter, is one of the additions, we are informed in the preface, to the present volume. Prophylaxis, the guarding against a single disease, belonging, properly, to special pathology, Dr. Williams confines his observations to hygienics, which term he prefers to hygiene, as more conformable to our language, and by which he understands the preservation of health. The circumstances which he considers as having this tendency are arranged under the following heads:—food, clothing, temperature, air, exercise, mental occupation, sleep, and excretion. Each of these topics receives a due share of notice, and under each we find admirable rules for the promotion of health, and, consequently, the prevention of disease. In so hackneyed a subject much novelty cannot be expected, yet we find many facts put forward in new points of view; and the important bearing of each is so clearly described as to attract forcibly the reader's attention. Thus, to give one example, when speaking of clothing, at p. 480, the effects which atmospheric electricity may produce on the healthy state of the human

body are glanced at. Further observations, we agree with our author, are needed, and, we would add, desirable to determine these points; but, in the mean time, his suggestion as to wearing of silk vestments next the skin should not be overlooked by those on whom this electrical action produces injurious effects. Silk, by its property as a non-conductor, has a considerable protective influence against electricity; moreover, by friction it excites electricity in the body itself, and the efficacy of this action in the treatment of many constitutional affections is well known.

Dr. Williams has appended to the volume now before us some extracts from an introductory lecture of his, which were prefixed to his first edition. His chief reason for so doing is, he informs us, to repeat to the profession a statement of what he considers to be the true reasons why practical medicine has not fully profited by the advancement of science. He is, however, evidently more influenced by the inquiry into the state of the practice of medicine, which occupied so large a portion of the concluding Numbers of the British and Foreign Medical Review, and which was chiefly promoted by Dr. Forbes, Dr. Combe, and by several anonymous writers. Their observations tended to the establishment of what they hoped would have proved a revolution in the science of the healing art, and which some of their more zealous votaries termed "Young Physic:" *young* it was surely well denominated, for it scarcely survived its birth. We have at present neither time nor inclination to renew this most unprofitable discussion, which, for a short period, gave a standing to empiricism in these countries, which, we venture to affirm, it would never have otherwise obtained; we more especially allude to the homeöpathic sect of quacks, or, as they were termed by their *Young Physic* allies, professors of a *rational* method of treating disease. We cordially concur with Dr. Williams in tendering the thanks of the profession to Dr. Symonds, of Bristol, whose letters to Dr. Forbes, published in the Numbers of the British and Foreign Medical Review, for October, 1846, and April, 1847, exhibited so ably the dangerous nature of the doctrines propounded by him and his new school.

Dr. Williams has, we think, done good service to the profession by his present publication. His character, as a practical physician, was already well established by his valuable monograph on the diseases of the respiratory organs, and by his contributions to the Cyclopædia and Library of Practical Medicine. That he is well versed in the science of medicine he has now proved, as also that he possesses the will and

the industry to devote his hours of leisure from the toils of a laborious profession to become acquainted with the daily improvements and additions to medical knowledge in which our age is so fertile.

The work of Dr. Wood, to which we have already cursorily referred, is in two thick, closely printed, royal octavo volumes. The author states that it contains the results of his public and private practice for nearly thirty years, and that he now offers to the profession the facts which he has accumulated, and the opinions he has formed, during that experience. As we have already remarked, we may regard it as exhibiting a view of the present state of practical medicine among our Transatlantic brethren; and the author evidently wishes his work to be viewed in this light, for the references to authorities throughout are chiefly to American physicians; and he expresses, in his Preface, the great aid he has received from the American Journal of Medical Sciences, "which comprises a body of the progressive medical knowledge of the last twenty years, especially of that contributed by the physicians of this country, which it would be difficult to find elsewhere."

As a pains-taking compiler and laborious writer, Dr. Wood is already known to the profession by his joint work with Dr. Bache—the United States' Dispensatory,—and the extraordinary amount of labour bestowed on the present volumes do full justice to this estimate of his character; but they do more, for they prove that he is a good practical physician, and a sound and judicious observer. The work professes to be a general treatise on the practice of medicine, and is divided into two parts: the first, which comprises general pathology and therapeutics, extends to 220 pages of the first volume, forming, as it properly should, an introduction to the second part, special pathology and therapeutics. It is divided into four chapters,—on the constituent forms of disease, etiology, semeiology, and general therapeutics; being thus analogous to Dr. Williams' book, whose plan, so far as the separation of this subject from the practice of medicine properly so-called—the description of special diseases—we prefer; it renders the latter less extensive, and tends more to fix the mind of the student on the advantages to be derived from a study of the former.

In so extensive a work as Dr. Wood's it must be expected that there are many points which would not bear too close a criticism; but the chief defect we see in it is, a manifest desire to extol the American school of physic at the expense of the

European. This is evidenced by the continued references throughout the two volumes to the writings or observations of his own countrymen, on very often the most trivial matters, and the no less general omission of any notice of British and Continental authorities, frequently on some important subject: indeed, as regards our own island, he seems to know little of our contributions to practical medicine,—at least he but very rarely notices them. To give an example: we do not find any mention of Graves' treatment of the cerebral complications of fever by tartar emetic and opium, or of the use of wine and the indications for it in this same disease, as laid down by Stokes.

Dr. Wood's observations on the treatment of disease we are bound to receive as the result of his many years' experience obtained in the active practice of his profession, yet there are many of them, certainly, not applicable to similar diseases in this country. To select an example from the affection we have just referred to—fever, we do not think that the Irish physician of the present day would subscribe to his views as to the employment of cathartics. He directs(*a*) that in typhus fever the bowels should be kept open, throughout the whole course of the disease, by cathartics. They are indicated, he thinks, by the necessity which exists of avoiding accumulations of secreted matter in the bowels, so as to prevent its absorption; for he believes that it is probable the dark, offensive substances which collect in the alimentary canal in typhus act as a direct sedative to the system, and, therefore, cathartics, so far from increasing the debility, tend, if properly selected and employed, to obviate it.

Taken as a whole, however, we look on Dr. Wood's Practice of Medicine as a publication of very high value, written in a clear and distinct style, and the various subjects brought down to the present state of our knowledge. One of the few exceptions to this last commendation, however, we cannot avoid mentioning; we refer to the article on Bright's disease of the kidney, in which no notice is taken of Gluge's or Johnson's researches, which were surely made public in sufficient time for the author to have remarked on, as his volumes were not published until 1847. It is, in our opinion, notwithstanding, one of the best text-books for students in the English language; and we are glad to find that it can be had in this country at a very moderate price for so large a work.

Dr. M'Cormac's Methodus Medendi has, we know not how,

(*a*) Vol. i. p. 348.

escaped the notice of our predecessors in the editorial chair, and for this neglect of the publication of an Irish provincial medical practitioner we feel that we owe some apology. Under the very uninviting name which the author has thought fit to bestow on his work, we find a collection of essays on the principal diseases which fall under the cognizance of the physician, divided into eight classes, the basis of the classification being the anatomy of the parts affected. It thus forms an outline of the practice of medicine, exhibiting on the part of the author much judgment and acquaintance with the literature of his profession. His own experience, which is very extensive, is, in every instance, given to the reader, and the results he has arrived at, whether corroborative of, or opposed to the generally received doctrines, fairly stated. The author's style, though peculiarly quaint, is very clear, and we can recommend his book as one the perusal of which cannot fail both to interest and profit.

The Periodoscope, with its Application to Obstetric Calculations and the Periodicities of Sex. By W. Tyler Smith. M.B., &c. Churchill, London. 8vo. pp. 47.

The Medical Practitioner's Private Register of Midwifery Cases.

Both these publications proceed from the same hand, and we think that Dr. Tyler Smith has conferred a great benefit upon the profession by each of them. If practitioners will procure and honestly use the Register, we shall soon have a very large and valuable body of facts accumulated, and we may then hope to find a little more definiteness than at present in the statements made by writers.

In this little *brochure* we have a cursory glance at certain periodical characteristics of the sex, such as the catamenia, conception, and the subsequent monthly epochs, quickening, the viability of the fœtus, parturition, the lochia, mammary periodicities, and the reappearance of the lochia. For the better ascertaining and determining those periodicities, Dr. Smith has constructed the periodoscope, an instrument which appears to be likely to be very useful. We shall extract the author's own description of it.

"The small, moveable disc of the periodoscope contains the fifty-two weeks of the year, and it is also divided into thirteen lunar months, or ovarian periods. The circle beyond this contains a fixed scale of the catamenial periods, and the outer segment of a larger

circle contains a scale of 280 days, the normal duration of pregnancy, divided into the ten catamenial cycles of gestation. I mark five days upon the calendar as being the ordinary duration of the catamenia, but, as I shall have to repeat, in some women it is greater, in others less. Reckoning the catamenial period preceding conception, and the lochial period of parturition inclusive, I have figured in the instrument eleven catamenial dates, so that the outer scale really represents 285 days. The best mode of computing the time of parturition I believe to be this: we should find the date of the commencement of the last catamenia, upon which conception would, in ordinary cases, occur in a few days after the cessation of the catamenial flow, and we may then expect that the ovarian irritation or lochial flow which determines the occurrence of natural parturition, will commence with the sanguineo-mucous secretions, or with the uniform contraction of the uterus at the commencement of the eleventh catamenial date; and that labour will become fully developed on some one of the days of this ovarian period, or of the days in which the ovule would have descended the Fallopian tubes, supposing there had been no conception, and the catamenial discharge and ovulation had proceeded regularly. Thus the scale of calendar months being moveable, and the scale of lunar months, or ovarian periods, being fixed, all that need be done is to turn the moveable circle round so as to make the arrow at the word 'CONCEPTION' point to the date at which the last catamenia commenced, when the second arrow, at the other end of the scale, will point to the exact date when the commencement of 'PARTURITION' may be expected. The lunar or ovarian scale of pregnancy will also mark accurately the date of each of the periodic excitements which occur with more or less distinctness during pregnancy; so that we may at once, without the trouble of a moment's calculation, read off for the use of patients the probable time of parturition, and the dates when all physical irritation and causes of abortion are to be avoided. Of course, these remarks apply to strictly natural cases of utero-gestation occurring in women whose catamenia appear every twenty-eight days. The only possible source of error, with an exact instrument, is, that fifty-two weeks only make 364 days instead of 365, and that leap-year always contains 366 days; but this is allowed for with the greatest ease, if it should happen that the pregnancy includes December and January, or February in leap-year; otherwise there is no mistake in the calculation of a single day. Any variation in the length of pregnancy from this standard is either before or after the proper time."—p. 12.

Our present object being to call the attention of the profession to this calculating machine, we shall not stop to notice one or two points of the physiology of this statement, from which we differ, but which may well be tested by its assistance.

The Midwifery Register contains columns for the different facts connected with pregnancy and labour; as name, age,

number of pregnancy, date of last menstruation, conception, expected labour, important occurrences during labour, duration of pregnancy, commencement of labour, presentations, occurrences during and after labour, date and hour of termination of labour, duration of labour, number of children, sex, and whether twins or not, weight and length of child, and occurrences within a month.

In our own case-book we have, in addition, a column for the age of the husband, the character of previous labour, number of children living and dead, the period of rupture of the membranes and of the expulsion of the placenta, and the length of the funis and the period of its desquamation. We think that Dr. Tyler Smith might advantageously introduce some of these into future editions of his work.

We heartily hope that it may have an extensive sale, and we think every practitioner of midwifery in England and Ireland should possess a copy, for we are sure that nothing would tend more to the improvement of practical knowledge and the advancement of science than such a register of actual facts, conned over by the practitioner, and afterwards published.

A Treatise on Diet and Regimen. By William Henry Robertson, M. D., &c. Fourth edition, rewritten and much enlarged. Two volumes, post 8vo., pp. 355 and 353. London, Churchill. 1848.

We noticed the appearance of the first volume of this work, on a former occasion, with approval. We have since read the second volume, and find reason to repeat our approbation. Like every book written on the subject, there are many announcements of opinion upon topics which are difficult to investigate, and have not, certainly, been ever strictly tested; but there are likewise to be found in these volumes many exact facts, an acquaintance with which will be found useful, and, under certain circumstances, indispensable. The subjects treated are numerous and important. The first volume is devoted to a general and particular consideration of human diet. The second volume contains seven chapters: one on muscular exercise; another on ventilation, climate, and change of air; a third on the hygienic effects of clothing; a fourth on bathing, ablution, &c.; and the remainder on mineral waters, sleep, the effect of occupations upon health, and on mental culture. Entering on the elucidation of matters so extensive, the author

has apparently availed himself of all the best works on each subject. He has judiciously selected and compiled the information thus placed within his reach, as far as the present, and has thus been enabled to produce a work which is creditable to his judgment, and calculated to prove serviceable to his readers; we, therefore, feel no hesitation in recommending these volumes to every one desirous of accumulating a choice medical library.

Having said thus much in praise of the work before us, we may be permitted to criticise the present state of knowledge on the subject of diet, as afforded to us in its pages; and we wish it to be understood, that in any observations which we may hereafter make, we do not intend to cast any blame upon Dr. Robertson. That gentleman has done all that could be expected from him, in affording a faithful transcript of the existing state of knowledge; he is not answerable for deficiencies which science has hitherto failed in supplying. If we are found, therefore, to cavil against certain doctrines contained in his book, it is with received opinions we quarrel, but opinions which Dr. Robertson was justified in bringing forward just because they are generally received. Without in the slightest degree blaming the author, we may be permitted to canvass whatever appears to us objectionable in his pages.

The first thing that strikes us is the exceedingly vague meaning attached to the word "digestible." Dr. Beaumont looked on digestibility as a question of time. He experimented on a vast number of substances, and according to the period they took in becoming dissolved in the gastric juice he judged of their digestibility. Thus, boiled rice dissolved in the stomach of Alexis St. Martin in an hour; roast turkey in two hours and a half; hard boiled eggs in three hours and a half; boiled salmon in four hours; and roasted pork required five hours and a quarter to enable it to dissolve. Well, if the time requisite for the solution of any particular substance in the gastric juice be what is meant by digestibility, these experiments are calculated to give us very exact ideas on the subject. But then, that digestibility does not merely mean solubility in the gastric juice, is evident from the following passage:

> "The question as to the digestibility of cheese is by no means confined to that of its solubility in the gastric secretions, or its passage into the upper bowels."—p. 128, vol. i.

From this it appears that a substance may be very soluble and yet not digestible. The next sentence to the one quoted goes on to say, that

"Cheese is apt to produce crudity, and consequent irritation, in the intestines, and to affect the functions of the abdominal viscera, —sometimes inducing a relaxed, but more frequently a costive state of the bowels; and it may be on these accounts sufficiently objectionable, supposing that its primary digestion may occasion no inconvenience."

Now as we do not know the meaning of the word "crudity" in the foregoing extract, it is possible we may not understand the sentence; but, as far as we are able to comprehend it, it seems to convey that a substance must not only be soluble in the stomach, but be also unproductive of inconvenience, to entitle it to the character of being digestible. In support of this explanation we may bring forward the statement made at page 128: "Animal fibre is not digestible in the ratio of its solubility, since veal and lamb are less easily digested than beef and mutton." So that a something besides solubility is essential to the definition of digestibility.

The question becomes still more obscure when we find liquids, incapable of coagulation, talked of not only as digestible, but their comparative digestibility discussed. Thus, our author says, in p. 260:

"In the tabular list of the different products of alcoholic fermentation chiefly made use of, the individual articles are classed in the order in which I believe them to be usually digestible."

Now this is said introductory to the section on wines. Again, page 262: "Of the wines champagne is usually considered to be the most easily digested." In this case solubility is left entirely out of consideration, for no one can imagine that champagne requires to be dissolved; nor can we suppose that *inconvenience* can either be taken into account, unless inebriety be considered comfortable,—for champagne will, without doubt, produce intoxication, if taken in sufficient quantity. The more we dive into the subject, the more difficult do we find it to be to define what digestibility accurately means. How are we to understand the following passages?

"There can be no doubt, as has been well and ably shown by Dr. Prout, that the digestibility of many substances is much impaired by their being offered to the stomach in a concentrated form; that honey, inasmuch as it is a weaker form of sugar, is by so much more easily assimilated than pure sugar; that cream or butter, when taken in the natural state of milk, are much less objectionable and injurious to the stomach, and task less the assimilating powers of the system, than when taken in the separated and concentrated form; that pure albumen, or pure gelatine, or pure fibrin, is, per-

haps, in every case, less easily assimilated than when in the state of natural dilution in which they severally exist in the ordinary articles of food."—p. 129.

Now the foregoing extract, taken by itself, is intelligible. According to the views contained in it, stimulating matters are more digestible when diluted than when concentrated. But we cannot reconcile this with the following:

"The relative difficulty with which fish is so often found to be digested might possibly be referred to the larger quantity of water mixed with the albuminous matter."—p. 141.

Why, in this case, it appears that dilution diminishes digestibility. In the following extract concentration is made to render aliments more easily digested.

"One of the most important of the uses of cookery is to adjust, and, in some degree, equalize, the condition of the several alimentary substances as to this matter. Animal food contains, in the first instance, as much combined water as is commonly required for the purposes of the primary assimilation; and the uses of the economy are sufficiently answered by taking any additional aqueous matter that may be required, either at the meal times, or at other periods of the day. Indeed, the modes in which meat is often cooked necessitate the removal from the meat of a considerable proportion of the aqueous matters; the animal fibre not seeming to be thereby rendered in any very apparent degree less digestible, provided this desiccating process is not carried too far."—p. 143.

We have already acknowledged our inability to reconcile these apparent paradoxes. It appears that food is more digestible the more diluted it is; but fish is less digestible than beef or mutton, because it is more dilute; and cooking does not injure the digestibility of animal fibre by rendering it more concentrated.

The fact is, people talk and write too frequently without attaching any definite meaning to the words they use. Digestibility, assimilation, dyspepsia, are convenient words for covering ignorance, because they mean everything and nothing. What does any one mean by the digestion and assimilation of sugar? That which we know to happen to this substance when swallowed in moderate quantity is, that it is dissolved in the liquid contained in the first passage, just as it would dissolve in a glass of water, is then absorbed into the blood, and, lastly, oxidized in the capillaries. It is assimilated to nothing in the organism; it is no more digested in the stomach than it would be in a phial containing water, and placed on the mantel-piece. And what is meant by saying that honey is more easily assi-

milated than cane-sugar? Is it meant that the former is less likely to disagree with the stomach and bowels? We very much doubt if this be the fact. When the mucous membrane is in a natural condition, the ingestion of either in a moderate quantity is not followed by any inconvenience. If the mucous membrane be inflamed or irritated, diluted saccharine solutions are calculated to soothe it; and when relaxed and enfeebled, the constant use of these substances will still further diminish the tone of the tissues. But no one, from these considerations, is entitled to predicate whether sugar or honey are digestible or not. Concentrated saccharine solutions act as laxatives; and as they do not irritate, the probability is, that they are enabled to do so by causing mechanically an increased secretion into the intestines on the principle of endosmose. But whether this explanation be received or not, let us for the future use plain words with distinct meanings, and get rid of all vague or unmeaning phraseology.

Another subject which has attracted our attention, while glancing over the pages of the volume devoted to the subject of diet, has been the neglect with which the mineral constituents of food has been regarded by most writers on aliment. Dr. Aldridge has hitherto been the only person who has paid any attention to this branch of the subject; which yet appears to us to be of every whit as much importance as any other. The proposition advanced by Dr. Aldridge is, that every constituent of waste must be replaced by the aliment in exactly equal proportion, otherwise that disease will be the inevitable result. He shows that the minimum quantity of muscle or of seeds necessary to supply the loss of the organic elements, is deficient in the proportion of sulphur and alcalies requisite for compensating the waste of those ingredients: while, on the contrary, the succulent parts of vegetables, although deficient in nitrogen, abound in those mineral substances that are wanting in seeds and flesh. He concludes that the most economical dietary should consist of a combination of seeds and flesh, to supply the organic constituents, with succulent roots, stems, or leaves, to afford the necessary mineral elements.

These views lead him, incidently, to conjecture that scurvy is dependent on a deficiency of sulphur and potassium in the aliment. This disease only appears in cases of restricted diet. On board ship, when the sailors are living on salt meat and biscuits; in gaols, or similar institutions, where there is a fixed dietary, as in some late instances in Scotland, in which a certain quantity of milk was exchanged for treacle and water; in times of scarcity, when the usual mixed diet becomes ex-

changed for a limited and purely seminal one, as some years ago in India, and more lately in Ireland. When the diet is not restricted per force, it may be virtually so through the influence of despondency; and, under such circumstances, the results are the same. Now it is notorious that there are two classes of prophylactics or remedies that have been found equally efficacious in the prevention and cure of scurvy, namely, fresh vegetables, and vegetable acids. Dr. Aldridge, regarding, perhaps too exclusively, the effects of the former, imagines that they prevent or cure scorbutus, by supplying the mineral elements which the diet would be otherwise deficient in. Others, looking to the influence of vegetable acids, conceive that it is to the want of those that scurvy is always due. Dr. Christison supposes that, in the Scotch cases to which we have referred, the disease was produced by a diminution of the albuminous constituents of the dietary: but in the series of papers in which he brings forward this hypothesis, he describes dietaries containing less albumen, under the use of which scurvy did not arise. These Scotch cases are, however, of interest in another point of view: milk cured the scorbutus which treacle produced, yet both are equally acidifiable when mixed with other constituents of the dietary: therefore it is not the want of acids which produces the disease. But milk abounds in all the mineral constituents of food; and these cases are certainly in favour of Dr. Aldridge's hypothesis. A very strong argument has, however, been adduced in opposition to Dr. Aldridge's views, derived from the analysis of the blood in scurvy; and that which renders this argument still stronger is, that Dr. Aldridge has himself borne testimony to the fact. In the Number of this Journal for November, 1847, are described some cases of both land and sea scurvy, by Dr. Neligan, to which are appended analyses of the blood by Dr. Aldridge; in these cases the quantities of sulphur and potassium were found to be at least equal to the average proportions contained in healthy blood. Now it has been argued that if scorbutus proceeds from a deficiency of the elements of the food, there ought to be found a corresponding deficiency in the blood, whereas the contrary is the fact. But even these data are not sufficient to set the question at rest, for there is no proof that the blood is the seat of disease in scurvy, while there is strong reason for regarding the muscle and cellular tissues as the parts principally affected. Now Liebig has shown that potassium abounds in the muscles, sodium in the blood; the former are acid in their reaction, the latter is alcaline. No comparative analysis has as yet been made of the muscles and cellular tissue in cases of scurvy and

in health; and until this be done the question must remain *sub judice.* It is possible that, although the average quantity of sulphur and potassium may exist in scorbutic blood, it may not be so as regards the entire system; and that this average quantity is essential to enable each part to attract to itself the quantity requisite for its healthy nutrition. Moreover, it may be, and the supposition is not without support from analogy, that the presence of a standard proportion of certain elements in each organ may be necessary for the production of essential compounds in the organ; for example, it may be that the presence of a certain amount of potash in the muscles may be requisite for the formation of the organic acids found in these organs; and it may even be the case that these acids when formed favour the abstraction of the alcalies required for their reproduction from the blood. These are questions which can only be resolved by the analyses which we have indicated.

But whatever opinion may be entertained as to the cause of scurvy, there cannot be a doubt as to the great importance of paying due attention to the mineral constituents of food. We know of one disease which essentially consists in a deficiency of iron in the system, and we know that disease can be cured by supplying the metal which was wanting. Without chloride of sodium being taken in sufficient quantity neither the gastric juice, the bile, the nerves, and the brain, nor indeed even the blood itself, can be perfected; without phosphate of lime the cartilages will never become transformed into bone. It was only the other day discovered that sulphur constitutes a large and essential element of the bile. Now it is important to know that all kinds of food do not contain these principles in the proportions which health demands; and it is, at least, reasonable to inquire whether diseases which at present we feel incapable of attributing to any particular origin, or even some of those which we now assign to very different causes, may not proceed from the defective nature of the aliment employed. We may here notice a very insidious, but most fallacious, objection that has been made to the opinion that succulent vegetables owe their utility in a system of healthful alimentation to the presence of a large proportion of mineral ingredients. The objection is this: dried vegetables contain the same quantity of mineral elements, but they are not equally efficacious with fresh vegetables, therefore the mineral ingredients have nothing to say to their utility. The answer to this objection is simply, that dried mineral substances are not by any means so soluble as when they are in a hydrated condition.

We shall now leave this topic and turn to another, to which

our attention has been directed by the article on climate in the second volume of the work before us. Physicians have been very much puzzled by the facts announced in modern works on climate, especially by those contained in the Army Medical Reports, to determine the best localities to which to send their pulmonary patients. It has been proved that phthisis pulmonalis is, if anything, more common in Malta, the Ionian Islands, Gibraltar, the Channel Islands, &c., than at home; and it has been argued, why should we send a pulmonary patient to a place the inhabitants of which are as much or more subject to the disease than we are ourselves? We do not deny that the choice of locality is a matter of importance; the means of comfort to be placed at the disposal of an invalid ought to be considered, as well as the chances of society and amusement, and the avoidance of such winds and temperature during his sojourn as might prove injurious. But we must, nevertheless, protest against the foregoing method of putting the inquiry. The physician does not send a phthisical patient to a foreign country, merely because he believes there is anything particularly salubrious in the nature of that country, or remedial in its climate, but because he knows that gentle travelling, and especially travelling by sea, increases the appetite, cheers the mind, and improves the strength. He knows that phthisis is an essential disease, and that if local complications can be controlled, and the powers of the system upheld, until the first energy of the diathesis becomes exhausted, he may hope that life may be indefinitely prolonged. Therefore it is that sea voyages have been recommended through all times in the treatment of this disease; they are to the consumptive like wine to the typhus patient: and it is little matter whether phthisical patients are directed to a place where the disease is commonly endemic or not, provided the patient does not during his stay expose himself to injurious influences, or remain so long as to exhaust that sense of novelty and enjoyment from which benefit is chiefly to be expected. We have alluded to this subject because we have known instances in which patients were prevented from going to places where they might have been pleasant and comfortable, and sent to situations where they remained for months solitary and joyless, owing to opinions founded on the principle which we have stated, and which we believe to be erroneous.

Observations on Hospital Gangrene, with Reference chiefly to the Disease as it appeared in the British Army during the late War in the Peninsula, &c. &c. By JOHN BOGGIE, M. D., Surgeon to Her Majesty's Forces. 8vo. pp. 151. Edinburgh, 1848.

THE author of this book has mistaken both his vocation and his time. There are some excellent persons in the world, endowed by nature with capacities for anything but writing. Among such stands Dr. Boggie, whose English orthography must sorely vex the shade of Cobbett, if that worthy personage be still cognisant of nominative cases.

Still more lamentably has he mistaken his time. We are told that the Essay before us is a reprint of one read by the author before the Medico-Chirurgical Society of Edinburgh, in 1826, and published subsequently in their Transactions. Various grounds are adduced for its republication in a separate form. We shall only adduce what is obviously the main one, namely, to show more distinctly than formerly the claim advanced of having *introduced* the antiphlogistic mode of treatment in hospital gangrene. Now, granting to Dr. Boggie that, before his appointment in chief to the Cordileria hospital at Bilboa, surgeons *always* stimulated, and *never* bled in that disease, a letter to some of the weekly periodicals might have fully satisfied him, and re-established his claims, if necessary. He surely cannot complain of having been neglected in the works of contemporaneous writers; we will instance two only, because they are in the hands of every well-educated surgeon,—Cooper's Surgical Dictionary and South's translation of Chelius. The former learned compiler has repeatedly quoted the original essay in the Edinburgh Medico-Chirurgical Transactions, and has inserted in his article on hospital gangrene every single fact of importance contained in that essay; while Mr. South has placed it among the few bibliographical references bearing on that subject. As to the doctrine of the propriety of the antiphlogistic treatment in hospital gangrene in *some* cases, the surgical world were pretty well agreed, even before 1828, the date of our author's first *published* observations. Our best works on military surgery, before that period, gave us very full information on this point.

On the important and oft-mooted points, as to the local or constitutional nature of the disease, and its exact mode of propagation, nothing is added, and a great deal omitted. We believe Dr. Boggie has served his country well, but in bringing before the world this book, we repeat, he has mistaken *his time*. True, Galileo did the same,—but it was in the *opposite direction*.

PART III.

REPORTS, RETROSPECTS, AND SCIENTIFIC INTELLIGENCE.

PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF DUBLIN.

GENITO-URINARY SYSTEM.

1. *Extra-Renal Tumour.*—Dr. Hutton presented a specimen of a remarkable renal tumour. The subject of this disease, a boy five years of age, was admitted into the Richmond Hospital on the 20th March, with symptoms of vesical calculus. About two years and a half ago the child had been affected with caries of the dorsal vertebræ, attended with a chronic abscess in this region, but with little displacement of the vertebræ. The abscess opened, and continued to discharge for some time; the patient had anasarca, and his constitution was much impaired. Under Dr. Kirkpatrick's care he improved considerably, and was sent to the country.

About a year since the child began to complain of pain in passing urine, stillicidium, and other symptoms of stone in the bladder. On his admission into hospital he appeared much exhausted; his complexion was livid, and he had an expression of languor and anxiety, but he lay in a passive state, making no exclamations of pain. The pulse was weak, small, and frequent; respiration hurried; and he vomited everything he drank. The urine flowed constantly, and the prepuce was elongated and excoriated. The abdomen was swollen, particularly at its left side; and in the left lumbar region there was a remarkable prominence. The integuments here were, to a small extent, of a dull red colour; and a sense of fluctuation was felt between the last rib and the crest of the ileum posteriorly. As it was thought possible that the vomiting and general distress might depend on the confinement of purulent matter in this situation, a grooved needle was introduced on the 23rd, three days after his admission, and a fluid escaped which had the appearance and smell of turbid urine: its specific gravity was 1012. The opening was then enlarged with a bistoury, and about two or three ounces of very fetid urine were received into a vessel; some more continued to flow through the opening. The tumour did not appear to be very sen-

sibly reduced, but it felt softer and less tense. No relief ensued, nor was there any marked aggravation of symptoms. The vomiting continued, and the child died on the fifth day after his admission into hospital, having sunk gradually; he did not complain of any increase of pain.

Post Mortem Examination.—On opening the abdomen the omentum was found adherent to the parietal peritonæum along the left side; it adhered also to the descending colon, which was covered with lymph, and connected by its posterior surface to an oblong tumour extending vertically from the diaphragm to within an inch of Poupart's ligament, and transversely from the spine to the left side of the abdominal cavity. The tumour was of a dark slate colour, and contained fluid like that discharged from the opening made during life. The peritonæum presented the usual signs of inflammation, but in a slight degree, except in the vicinity of the bladder and of the tumour, where the parts were agglutinated by a larger quantity of lymph. The mesenteric glands were generally enlarged.

The mucous membrane of the urethra and bladder was very vascular. The latter was contracted, and contained a very rough calculus of oxalate of lime, about the size of a nutmeg. The right kidney and ureter presented nothing abnormal. On laying open the left ureter, which was not dilated, an oval ulcerated opening, half an inch in length, was discovered at about the middle part of its length. A probe introduced into this passed into a sac which surrounded the kidney, and was formed by the proper capsule of the organ, detached from its cortical structure, but connected with its pelvis at the concave border of the gland. The kidney was rather diminished in size, and its convex border presented two fistulous openings, one at its middle, and the other at its inferior part. A probe introduced into these openings entered readily into the pelvis of the kidney and ureter. On dividing the substance of the kidney the fistulæ were found to have resulted from two small distinct abscesses. On examining the chest the lungs were found extensively adherent to the parietes, and also to the pericardium, which they completely concealed. The pericardium was everywhere adherent to the surface of the heart.

Remarks.—It seems probable that the continued irritation of the bladder induced the morbid action in the kidney, from which the abscesses and renal fistulæ resulted. The urine escaping through the fistulæ seems to have detached the proper capsule of the gland, and to have dilated it to the extent described. The communication between this sac and the ureter at its middle part was probably a subsequent occurrence.

Rayer, in his work on diseases of the kidney, has described and illustrated three cases of renal fistulæ, two of the left and one of the right kidney. Of the former, the fistula in one instance passed through the diaphragm, and communicated with a bronchial tube; in the other the fistula opened into the descending colon. The renal fistula of the right kidney communicated with the duodenum. In these cases, however, the ureters had been obstructed, and the

urinary sacs were formed by the excessive dilatation of the pelvis and calyces of the kidneys. Mr. Stanley has published a case in the twenty-seventh volume of the Medico-Chirurgical Transactions, in which a very large urinary sac was formed in the cellular tissue around the kidney, from the escape of urine through an opening in the pelvis of the gland, the result of injury. The case now adduced, however, differs in several respects both from M. Rayer's and Mr. Stanley's, but particularly in the mode of formation of the urinary sac.—*March* 29, 1845.

2. *Renal Calculus— Bright's Disease of the Kidney.*—Dr. Lees presented a specimen taken from the body of a man aged 48, who was admitted into the Meath Hospital in a state of extreme debility, and labouring under chronic bronchitis in a congestive form. His general appearance was cachectic; he vomited every morning, and had pain in the right lumbar region; his urine was abundant, pale, alkaline, albuminous, and of low specific gravity (1·007). He had formerly been a soldier, and, while on service in Africa twenty-four years ago, was attacked with fever, from which his recovery was very slow; ever since that time he suffered from some derangement of the urinary organs, in consequence of which he was at length discharged, as unfit for military duty. Having afterwards returned to Ireland, his health improved, and has been generally good, with the exception of a few days' illness six years ago, when he passed a small calculus from the urethra; but he had an habitual cough during the last few winters. About three months before his admission the cough became much more severe, and he was attacked also by violent pains, with swelling of both feet. When he was admitted, there was no longer any swelling of the feet, but he complained of a sensation of burning pain in the soles, which was more severe at night. Dr. Lees formed the diagnosis of renal calculus, probably phosphatic, and combined with degeneration of the kidney itself. After he had been a few days in the hospital, he was attacked with erysipelas of the head and face, which extended to the fauces; he passed into a semicomatose state, and died.

Autopsy.—The diagnosis which had been formed of the existence of renal calculus was verified by the examination of the right kidney, in the pelvis of which there was found impacted the small calculus now produced. There was some slight inflammation of the mucous membrane in contact with the calculus, and the substance of the kidney adjoining it was more vascular than the rest, which exhibited the usual appearances of Bright's disease. The calculus itself is very brittle, and consists of the triple phosphate, not a common variety of renal calculus.

Dr. Lees directed attention to the several points of interest in this case: the irritability of the stomach, which is so characteristic of renal disease, and the coexistence of a renal calculus of the triple phosphate along with Bright's disease.

In connexion with the preceding case, Dr. Lees reminded the Society of a specimen of renal calculus which he had brought

under their notice during the last Session, but which had not then been analysed. [*Vide* Proceedings of 1st February, 1845.] He had now to produce a section of it; the weight, when entire, was four ounces, and it has been found to consist chiefly of the triple phosphate, with an excess of phosphate of lime.—*April* 11, 1846.

3. *Enlarged Prostate Gland.*—Dr. Mayne presented a recent specimen of diseased prostate gland, taken from the body of a man aged 72, who lately died of dysentery in the Hospital of the South Union. The prostatic disease, under which he had laboured for a considerable period, was attended by the ordinary symptoms, but towards the close of the case it was marked by the occurrence of some uncommon circumstances, which induced Dr. Mayne to lay the specimen before the Society. This patient frequently suffered retention of urine, occurring at intervals of three or four weeks, easily relieved by the catheter, and again brought on by exposure to cold, by any irregularity of habits, and very often by permitting the bladder to become too much distended; he was in the habit of occasionally absenting himself from the workhouse on leave, and was always observed to return suffering from retention. In June last he had gone out, as previously, on leave; he was absent much longer than usual, but when he returned he was not suffering from retention. This excited some curiosity, and being questioned, he acknowledged that, immediately after he had gone out, he was attacked by the complaint, and, not wishing to return so soon, he had applied to a medical practitioner, who proceeded to relieve him by introducing a catheter. This he described to have been effected with great difficulty; that blood flowed away before the urine began to be discharged, and that he was directed to retain the instrument in the bladder for some days. The result was that from that period to his death, an interval of about seven months, he had no return of the complaint. So pleased was he with this, that he used to contrast very unfavourably the medical practice of the hospital with that of the surgeon, by whom he said he had been perfectly cured at once.

Upon examination after death the prostate was found enlarged in all its lobes; the third lobe projected from behind forwards, and a false passage had been effected through it, which had become established as a new portion of the canal for the passage of the urine, which had continued to be discharged by it.

Dr. Mayne observed that Sir B. Brodie had advised the use of force in passing the instrument in cases of this kind. He says, "When your efforts to introduce the catheter have been unavailing, when you feel the point pressing against the tumour of the prostate, and unable to pass over it, apply some force to the instrument at the same time that you depress the handle. It will generally penetrate through the prostrate, enter the bladder by an artificial opening, and relieve the patient, and, of course, continue to relieve him, if you allow it to remain in the bladder."

Dr. Mayne observed, that the result of the case he had laid before the Society, whether the practice was designed or accidental,

confirmed (as far as one case could) the propriety of the advice given by Sir B. Brodie.—*January* 23, 1847.

4. *Encephaloid Disease of the Kidney.*—Dr. Lees exhibited a specimen of encephaloid disease of the kidney. The patient who had been the subject of the disease was a man named Robert Dinning, aged 60, a game-keeper, in the employment of the Duke of Leinster. He had been admitted into the Meath Hospital last summer, under the care of Mr. Smyly, to whom he (Dr. Lees) was indebted for the opportunity of laying the preparation before the Society. It was worthy of remark, that he was not admitted into the hospital for renal disease, but for hydrocele. When Mr. Smyly examined him, he detected a tumour in the right lumbar region, of the origin of which the man could not give any satisfactory account; indeed he seemed quite unconcerned about it, and merely requested to be relieved from the hydrocele. The tumour was of small size, situated in the right lumbar region, having a soft, fluctuating feel; it was free from pain, and there was neither œdema nor enlargement of the veins over its surface. The patient stated that he observed this tumour only a month previously; that he had suffered occasionally from pain in the back, which he attributed to rheumatism, and that for some time back he had occasionally passed gravel and blood with the urine, which, upon examination, was found to possess a specific gravity of 1007, and to contain the phosphates in considerable quantity.

Dr. Lees thought this case of much interest, as bearing upon the diagnosis of renal disease. It was obvious that the tumour might have been connected, either with the liver or the kidney; but the absence of any gastric affection, the freedom from pain or tenderness in the region of the liver, and, above all, the state of the urine, induced both Mr. Smyly and himself to come to the conclusion, that the case was not one of disease of the liver. But the question still remained to be determined, if it was an affection of the kidney, what was the nature of the disease? Was it an example of great distension of the kidney from obstruction to the flow of the urine, owing to the presence of a calculus, or was it malignant disease? This was a question more difficult to be determined, and to these two points their attention was particularly directed. In favour of the idea that the tumour was consequent upon the presence of a calculus might be quoted the presence of a soft tumour in the region of the kidney, accompanied by so evident a feeling of fluctuation that they were almost tempted to puncture it, and the circumstance that the patient had suffered for two years from the occasional passage of blood and gravel with the urine. But, upon the other hand, he had never had any of the rational symptoms of calculus, namely, sickness of stomach, vomiting, pain along the ureter, or retraction of the testicle. Both Mr. Smyly and Dr. Lees consequently made the diagnosis, that the case was one of malignant disease of the kidney, and the result of the *post mortem* examination proved that they were correct.

Autopsy.—When the cavity of the abdomen was laid open, the right kidney was found enlarged to an enormous size; it weighed four pounds and a half. The natural structure of the organ had totally disappeared, and one immense mass of encephaloid disease was enclosed within the renal capsule. The ureter, the caliber of which was nearly as large as that of the abdominal aorta, was also filled with cerebriform matter. The other viscera of the abdomen were healthy, but a small encephaloid tumour existed in the bladder; it was not ulcerated, and was so situated as not to interfere with the passage of the urine. The friends of the deceased would not permit the chest to be examined. Dr. Lees remarked that the preceding case presented one or two interesting features. In the first place, it involved a nice point of diagnosis, to which he had already called the attention of the Society; and secondly, it gave some idea of the enormous amount of change of structure which the kidney might undergo without the patient experiencing much uneasiness: in fact this man entered the hospital in order to obtain relief from another complaint, and treated the tumour quite as a secondary consideration, stating that he was only aware of its existence for a month before the period of his admission. Again, the age of the patient was a circumstance worthy of being remembered, because encephaloid disease was more usually found in the young than in the old. Dr. Lees also exhibited a coloured cast which accurately represented the appearances of the tumour in the recent state.—*January* 7, 1848.

RESPIRATORY SYSTEM.

1. *Perforation of the Lung and Pulmonary Pleura.*—Dr. Corrigan detailed to the Society the particulars of a case of perforation of the lung and pulmonary pleura.

John Burke, aged 23, was admitted to the Whitworth Hospital on the 20th instant. For the last twelve months he had been subject to cough with some difficulty of breathing, but was not obliged to discontinue his occupation, as a servant, until about a month previous to his admission, at which time the cough became more troublesome, and the breathing more oppressed, and for these symptoms he sought admission.

Slight dulness, together with mucous râle, was detected under the right clavicle, signs which were sufficiently explained by the subsequent discovery of red solidification and some tubercular deposition in the apex of the right lung. In the left lung the signs of phthisis were also evident.

On the 25th, while the patient was sitting on the night-chair, dyspnœa became instantaneously intensely urgent, the countenance indicated great obstruction to respiration, the skin grew cold, and he panted laboriously for breath. On removing him to bed and examining the chest the whole of its left side sounded clear on percussion, and the heart was felt pulsating strongly at the right side between the fifth and sixth ribs. Succussion indicated the presence

of fluid and air in the left side, but no bourdonnement amphorique or metallic resonance was perceptible when he spoke, nor ringing sound when he coughed. Thus there was well-marked evidence of a large quantity of air and of some fluid in the chest, but the signs which indicate a free transit of air, or *permanently* open canal, between the large bronchial tubes and the cavity of the pleura, were absent, viz., bourdonnement amphorique, which is produced by the free blowing backward and forward of air through the fistulous opening, and metallic resonance of voice and cough depending on the same. The man died in the evening of this day, and, on making examination, the left side of the chest, when opened into, gave exit to a gush of air, and the heart was found in the position at which it had been felt to pulsate during life. The right lung did not present much appearance of disease, but had at its upper portion tubercular depositions in two or three places. At the posterior and lower part of the upper lobe of the left lung a small, nearly circular opening of about three lines in diameter was found, surrounding which was a deposition of recent false membrane. The circular orifice in the pleura communicated with a tubercular cavity of the size of a pigeon's egg, the wall of which next the cavity of the pleura was soft, flexible, and thin, and capable of lying down on the opposite wall and closing the orifice of the bronchial tube opening into it, just as the pliable valve of an air-pump would lie down upon and close the opening covered by it.

The points to which Dr. Corrigan wished to direct attention were these—the cause of death and the power of affording relief in such cases as the present. Dr. Corrigan's view of the case was, that on the rupture of the pleura taking place, a rush of air into the cavity of the pleura at once occurred; that by each successive effort of the patient to inspire and relieve himself fresh additions were, for some time, made to the quantity of air admitted, until the cavity of the pleura was filled and distended; that, from the flap-like covering of the tubercular cavity, none could get back again into the bronchial tubes; and that thus this confined and condensed air became a distending power suddenly forcing the heart over to the right side, and compressing the right lung, and thus producing suffocation. Dr. Corrigan was of opinion that such a case can be diagnosed by the concurrence of the signs which indicate pneumothorax, as in this case, viz., sudden dyspnœa, tympanitic sound on percussion, immediate displacement of the heart to the right side (when the attack is on the left), and succussion, with the absence, at the same time, of the signs which are owing to the free passage of air through the fistulous communications, viz., bourdonnement amphorique, and metallic resonance of cough and voice; and hence, in such a case again occurring, Dr. Corrigan would recommend the passing of a small trocar through one of the intercostal spaces, to give exit to the compressing air, which the flap-like covering of the tubercular cavity prevents from escaping. It would not, of course, cure the disease, but it would prolong life and diminish suffering; and many have

lived with pneumothorax for a great number of years.—*February* 10, 1846.

2. *Pleurisy with Effusion.*—Dr. Law exhibited a drawing of the appearances in a case of pleurisy with effusion, complicated with tubercles in the substance of the lung and in the false membrane.

Mary Fitzgerald, the subject of this disease, was aged 47. She came under Dr. Law's care on the 18th of September, and died on the 14th of October. She was a laundress, and had, during the three months previous to admission, been much exposed to alternations of heat and cold. When Dr. Law saw her she had dyspnœa, cough, anasarca, and ascites. When in the sitting posture, her chest sounded dull on both sides posteriorly, but especially on the left; no vocal vibration could be detected on the left side, but it was, to a certain extent, perceptible on the right. Nothing abnormal could be detected anteriorly. When placed upon her hands and knees, with the view of ascertaining how far the dulness on percussion and absence of respiration posteriorly depended upon solidification of the lungs, or on fluid in the cavities of the pleuræ, the change of position had no effect on the signs on the right side, but on the left the sound became less dull, and a distinct, although feeble, respiratory murmur could be detected.

She was placed under the influence of diuretics, and improved for a time, but this improvement did not continue; the dyspnœa again became urgent; she was obliged to lie with her shoulders more raised, and at this time a distinct frottement murmur could be heard in the præcordial region, but from its being modified by respiration it was considered pleural. This frottement entirely disappeared after a few days. The character of her symptoms, which bore the stamp of great prostration and depression, created in Dr. Law's mind the suspicion that, besides pleurisy with effusion, some malignant action was going on, probably in the lungs, although there was no enlargement of the cervical glands, nor congestion of the superficial veins in the sides of the chest, to countenance such suspicion. No febrile excitement accompanied this exacerbation. In the midst of the dull sound on percussion, which had increased much on the left side, and was now as remarkable anteriorly as posteriorly, there was distinct respiration heard below the mamma, while the heart also pulsated in its normal position, and with a distinctness that rendered it evident that the anterior dulness was not owing to effusion into the pericardium. On examination of the body, a copious serous effusion was found in the abdomen, and in the cavity of the left pleuræ. The right pleuræ costalis and pulmonalis adhered through the medium of soft lymph, which also dipped down into the sulci between the lobes. The left lung occupied but a small space in the side, being much diminished in size. Adhesions connected it with the diaphragm, and also with the side of the pericardium. The whole of this lung was coated with false membrane, which, both here and in the right side, was deeply tinged with blood. This membrane contained in its substance numerous small tubercles, which also

were found in the apex of the right lung, and which were, to use the expression of Dr. Williams, plump, in contradistinction to the shrivelled state in which they are sometimes found. Dr. Law considered the deposition of the tubercle in the false membrane, taken in connexion with the blood effused into it (similar to the mode in which this fluid is free in the substance of some inferior animals, without being contained in vessels), to be proof of the inferior type of the inflammation. Not that he did not think that blood might be effused into false membrane, even in the healthiest constitutions, for experience had established the fact that these false membranes were susceptible of all the pathological conditions of original structures, and of hæmorrhage among this number. But as the formation of tubercle is out of the course of normal healthy inflammatory action, whose tendency is reparative, and which, although it may not, in the act of reparation, make the injured part as perfect and complete as before, yet it at least comes near it, so that the original structure is replaced by one next to it in the scale of organization. But as the formation of tubercle is, as Dr. Law observed, a complete deviation from this reparative action, having no tendency to assimilate in any respect to a normal structure, the co-existence of the tubercle with effused blood in the false membrane, in the same way as in the inferior animals, would argue an action such as we are not left to conjecture would take place in an inferior animal, but which experience proves actually does take place.

In the disease that recently affected cattle in this country, the hepatization of the lung, with tubercle in the hepatized structure, had been observed, and, from the short time that there was any appearance of disease in the animal, it could not but be believed that it was one and the same inflammation that produced both the hepatization and tubercle. So also Dr. Law had seen peritonitis in the cat, and in the recent lymph had found tubercle, so as to be satisfied that both must have resulted from the same inflammation. The difference, then, which appeared to him to exist between inflammation in a healthy and an unhealthy subject, was, that while lymph is deposited in both, it is endued with different susceptibilities,—the one ranging itself under the standard of normal structure, and when subsequently inflamed, comporting itself exactly in the same way as original structure; the other, on the contrary, when inflamed, producing a heterologous growth, without any tendency to assimilate to its parent structure. The further difference that Dr. Law would establish between inflammation in an unhealthy subject, occupying a higher position in the animal scale, and an inferior one, is this, that while there is in both a tendency to deviate from normal nutrition, in the inferior animal it exhibits such tendency more speedily than in the superior, it being the result of a secondary inflammation in the latter, while in the former it is synchronous with the original inflammation. It would appear as if the superior animal required a certain duration of disease to deteriorate its constitution, and thus bring it down to the original state of the inferior animal.

Dr. Law remarked upon the physical signs exhibited during life, and confirmed by *post mortem* examination. The absence of vocal vibration, with the dull sound on percussion, and the faint and distant respiratory sound on the posterior left side, when the patient was examined in the sitting posture, rendered it doubtful whether these phenomena depended upon effusion into the side, or on solidification of the lung; for while the absence of vocal vibration (a sign whose value is very great in such cases) indicated effusion, the faint respiratory murmur favoured solidification of the lung; the dull sound being common to both. The manœuvre of examining the patient under a change of posture only partially succeeded in clearing away the doubt. For, although the sound became evidently clearer, and the respiratory murmur stronger, still both wanted much of their normal character; yet the change of posture producing any alteration in the phenomena proved that there was effusion. While examination of the body confirmed this, it also proved what prevented the lung applying itself to the side, in place of the partially displaced fluid, viz., its adhesion to the diaphragm.

Dr. Law considered then that the phenomena of this case furnished a complete refutation of Laennec's theory of egophony, viz., that it was the vibration communicated to the fluid interposed between the lung and the side of the chest; for the interposition of the fluid between the lung and the side in this instance was unquestionable, and still there was no egophony. The examination further explained the temporary frottement murmur that existed in the cardiac region, and its modification by respiration, by an adhesion of recent date between the external surface of the pericardium and the pleura, lining the internal surface of the left lung. This adhesion also accounted for the heart's not being displaced by the extensive effusion into the left pleural cavity.—*March* 21, 1846.

3. *Œdema of the Glottis.*—Dr. M'Dowell presented a specimen of œdema of the glottis, taken from the body of a man aged 48, who was admitted into the Hardwicke Hospital labouring under pneumonia of the upper lobe of the left lung, extending from above downwards, and accompanied by considerable fever. The pneumonia yielded to appropriate treatment; then there appeared some fulness, attended with pain, below the angle of the jaw, on the left side of the neck. In this situation an abscess formed, which Dr. M'Dowell regarded as one of these critical abscesses so frequent in the fever then prevalent in Dublin. There were no very urgent symptoms, but after three or four days a blush of redness appeared over the tumour, which had considerably increased in size; there was now also difficulty of deglutition. The abscess was freely opened on the 18th of January, by an incision made through the cervical fascia; healthy pus was given exit to, and much relief was experienced. At six o'clock in the evening of the same day intense dyspnœa occurred; there was also great difficulty of swallowing. The clinical clerk, being called for, found the patient sitting up in bed, breathing convulsively, his face livid, a clammy sweat everywhere bedewing the surface, the extre-

mities cold, and the vital powers rapidly sinking. Dr. M'Dowell was immediately sent for, but before the messenger reached him the patient had expired, after one or two violent convulsions. On examining the body after death, the abscess in the neck was carefully explored. It was situated below the parotid gland, and a little behind the angle of the jaw on the left side. It extended deeply inwards towards the larynx, and the tissues between it and the exterior of the larynx were condensed. On cutting into the larynx the submucous tissue of the arytenoid region was found so infiltrated that the opening of the glottis was completely obstructed; the remainder of the larynx was healthy. The upper part of the left lung was still solidified. Dr. M'Dowell remarked that the interest of this case depended on the occurrence of œdema of the glottis produced by subfascial inflammation, but only coming on after the abscess was discharging freely, and at a time when all danger of such a complication might be supposed to be at an end.—*January* 23, 1847.

4. *Typhoid Pneumonia.*—Dr. Gordon said, the preparation he was about to exhibit derived its chief interest from being an example of the mode in which the present epidemic had in a great number of cases proved fatal. A young man, twenty-two years of age, was seized on December 7 with the usual symptoms which precede an attack of the influenza at present epidemic. He was able to continue working at his trade until the 11th, when he was admitted into the Hardwicke Hospital. He had then slight fever, with a sense of great weight at the epigastrium; slight frontal headach and coryza; pulse about 100.

These symptoms continued during Saturday and Sunday. On Monday a remarkable degree of restlessness was observable, and he had a frequent short cough, which came on in paroxysms, and again subsided: he complained of slight pain in his right side. On examining his chest, it was found to be perfectly resonant, both anteriorly and posteriorly; and the only abnormal sound was a slight sonorous râle, which was audible chiefly on the left side. About six hours after this examination was made, he was suddenly seized with weakness, and total prostration of all the vital powers, so as to require the free exhibition of stimuli during that evening.

On the following morning his features were sunk and collapsed; he had a sharp, harassing cough, with but little expectoration; his pulse was 120, small and weak; his skin hot; but his lips were blue, and his extremities becoming cold. On examining the chest, it was found that the upper third of the right side sounded dull on percussion, and that, corresponding to the extent of dulness, there was distinct bronchial respiration and bronchophony. The lower part of the right, and the entire of the left side were perfectly resonant; the respiratory murmur through the left side was natural, but through the lower part of the right side it was puerile.

December 15.—It was found that the dulness was extending downwards over the right side, and bronchial respiration and bron-

chophony were now audible over almost the entire of this side; the vesicular murmur being audible only in the most inferior part of the lung. He complained of a constant darting pain or stitch in this side, but there was no frottement to be heard. The respiratory murmur through the left side had become puerile, and the sound on percussion loud. The patient had made no attempt to rally from the state of collapse; he was even more sunk, and the act of sitting up in bed, that the chest might be examined posteriorly, nearly produced fainting. He died in the course of the following day, the physical signs not having undergone any change. The *post mortem* examination showed that the right lung was solid; with the exception of its most inferior portion, it was found to be in the state of red hepatization, the second stage of pneumonia of Laennec. It sank in water, yet, though apparently firm, it was very easily broken down. There were also found the anatomical characters of pleuritis. Soft, tenacious lymph was extensively effused over the pulmonary pleura.

Dr. Gordon looked upon this case as an example of typhoid pneumonia, which was at the time very prevalent in this city. He was informed of three similar cases which had occurred in private practice, and proved fatal within the short space of thirty-six hours. He had then under his care in hospital five cases of the disease, which were all marked by the suddenness of the attack, and the prostration of the system which immediately ensued.

Dr. Gordon said, that we were acquainted with two forms of typhoid pneumonia, which had been epidemic in this country. The first, of which the present case was an example, had been prevalent at different periods since the year 1833, and had been well described by Dr. Stokes, Dr. Hudson, and others. This was the form which was so likely to supervene on typhus fever, erysipelas, &c., &c. The second was first noticed in this city in the year 1841, and its anatomical characters had been brought under the consideration of the Society by Drs. Corrigan and Stokes.

Dr. Gordon remarked in conclusion, that the important features in the present case were:—

1st. The suddenness of the attack of pneumonia.

2nd. The complete and immediate prostration with which it was accompanied.

3rd. The rapidity with which bronchial respiration and bronchophony became audible without any previous crepitus, *i. e.* the rapidity with which the lung became solidified, without having passed through the usual premonitory stage of effusion into the air vesicles; for it is to be observed, that not merely was there no crepitus before bronchial respiration and bronchophony were audible at the apex of the lung, but that, in conjunction with the latter signs, there was puerile respiration, and no crepitus audible in the centre of the lung, to which portion the bronchial respiration and bronchophony had on the following day extended.

4th. It was remarkable that the signs of solidification should

commence in the apex of the lung, and from thence proceed downwards, contrary to what is observed in the ordinary forms of pneumonia, and inversely to what we meet in the typhoid form of bronchitis, where the lower portion of the lung is that principally affected. And lastly, the existence of the anatomical characters of pleuritis, though during life there were no physical signs by which it could have been indicated.—*December* 11, 1847.

5. *Cirrhosis of the Lung.*—Dr. Law laid before the Society a specimen of cirrhosis of the lung, the chief interest attending which disease, it had often been remarked, was derived from the remarkable resemblance which its physical signs, constitutional symptoms, and pathological appearances, bore to those of phthisis,—a resemblance so strongly marked in this case, that he was induced to bring it forward. The subject from which the specimen was taken was a young girl, sixteen years of age, who had been under his observation at various periods for attacks of hæmoptysis, during the last three years. On the first occasion he saw her, she exhibited in a remarkable manner most of the physical characters of phthisis. There was well-marked dulness on percussion at the left side of the chest, an extraordinary amount of pectoriloquy, and resonance of the voice, more especially posteriorly between the scapula and the spine. A closer examination, however, led him to form the diagnosis that it was a case of cirrhosis of the lung, a conclusion he was induced to come to from the great resonance of the voice, the displacement of the heart, which pulsated under the left clavicle, and from the unusual resonance at the right side on percussion, and the absence of the constitutional symptoms of phthisis. It was, in fact, the symptom of hæmoptysis chiefly which led to a suspicion of consumption. The patient was a girl of twelve or thirteen years of age when she first came under his notice; and her friends informed him that, having seen a cart pass over a child, she was seized with sudden palpitation of the heart, from which she had ever since suffered. She came under his observation on several occasions during the last three years, for attacks of bronchitis and pneumonia affecting the right lung, and it was for one of these attacks that she was brought for the last time into the hospital. Her symptoms during this last illness were extreme dyspnœa, with an almost universal crepitus throughout the right lung. The entire surface of the body was of a dark livid and congested hue. He had an opportunity of exhibiting this case to many medical men, all of whom remarked the striking resemblance which the physical signs bore to those of phthisis.

Autopsy.—Upon laying open the cavity of the thorax, the lung of the affected side was found reduced to the condition of a mere rudimentary lung, and formed a small mass of tough fibro-cellular structure, displaying, when cut into, the mouths of the dilated bronchial tubes, but no trace remained of its vesicular structure. The heart was found situated immediately under the left clavicle; the dia-

phragm was drawn upwards to a considerable distance, allowing the stomach, which was situated above the fourth intercostal space, to emit a clear sound, when percussion was performed beneath the mamma. The margin of the right lung projected into the left side of the chest, and on examining this lung it was found in a highly congested state, with a few tubercles scattered through it. The left lung presented no trace of tubercular disease.

Dr. Law observed, that he always thought that the various hemorrhages which from time to time occurred in such cases were supplied from the lung least affected, an opinion which was confirmed by an examination of the pulmonary artery in this instance; for upon following the course of this vessel it was found that the blood met with no interruption at the right or sound side, in its passage from the right ventricle into the lung; whereas, at the left or affected side, the arterial branch seemed suddenly to terminate, and be no longer capable of permitting the entrance of the circulating fluid. This lesion was particularly interesting from the peculiar changes which took place in the lung affected, leading to a great diminution of its bulk, and consequent displacement of other organs, to fill up the space left by the contracted organ. The fibro-cellular structure observed in the left lung was first noticed by Laennec, who regarded it as composed of dilated bronchial tubes; but it was subsequently examined by Dr. Corrigan, who discovered the true nature of the structure, namely, that it was made up, not of dilated bronchial tubes, but of lymph endued with contractile properties, which, deposited in the structure of the lung, and in other organs, invariably produced contraction of the tissue, and modification of the form of every organ in which it existed.—*February* 12, 1848.

6. *Circumscribed Pleuritis.*—Dr. Lees said that the lungs which he then exhibited were taken from the body of a young girl eighteen years of age, who was admitted into the Meath Hospital under his care on the 31st January, suffering from an acute affection of the chest. She was labouring under fever, difficulty of breathing, and cough. There was dulness on percussion from the spine of the scapula down to the base of the left lung, and extending to some distance laterally. When the chest was examined with the stethoscope, intense bronchial respiration was heard posteriorly, from the spine of the scapula, down to the base of the lung on the left side. At the same time there was well-marked bronchophony, and a crepitus which was but feebly heard. The intercostal muscles appeared to act well; no displacement of the heart could be detected, nor, on making the patient lie on her face, did the change of position produce any sensible diminution of the dulness. So far all the signs indicated the existence of pneumonia. On the other hand, the history of the case, from which it appeared that the girl had been seized on the previous Saturday with severe pain in the side, preceded by rigors and relieved by bleeding; the total absence of vibration when the hand was placed over the dull portion of the chest; and the presence of a harsh, dry cough, without expectoration;—all these circumstances pointed out

the existence of pleuritis. The diagnosis of these two affections was accordingly made. It was unnecessary to dwell at length on the treatment; he endeavoured to bring her under the influence of mercury, but the patient rapidly sank, and died on the 8th.

Autopsy.—On opening the thorax the lungs were observed not to collapse, and on attempting to remove them from the body it was found necessary to detach the parietal layer of the pleura on the left side, in consequence of the effusion which existed; in doing so, the sac became ruptured, and exit was given to about two pints of fluid, which presented the appearance of oatmeal water. The lungs, with the pleural sac and corresponding portions of the diaphragm, were now removed from the body. On collapse of the sac, the left lung was found reduced to about one-third of its ordinary dimensions, and lay compressed against the spine. The costal and pulmonary pleuræ were adherent, as far as the external margin of the compressed lung, but external to this they formed a sac of considerable dimensions and of a conical form, reaching superiorly almost to the level of the apex of the lung, and extending downwards to the diaphragm; its internal surface was thickly coated with false membrane presenting a reticular appearance, particularly on its diaphragmatic portion.

To ascertain the state of the lung, a section was now made through its substance anteriorly, about its centre; in doing so, a cavity of considerable dimensions was laid open, and exit given to about two or three ounces of purulent fluid; on clearing out this cavity, it was observed to be lined with a false membrane, and being bounded on all sides by the pulmonary structure, presented some resemblance to a pneumonic cavity; further examination, however, proved it to be an interlobular circumscribed pleuritis. Fluid was found to pass from this cavity into the general sac; but from the great difference of the contents of each it is highly probable that this communication was owing to want of proper delicacy in examining the parts: another small circumscribed pleural sac was discovered posteriorly, close to the spine. The summit of each lung was occupied by tubercular deposits, and some calcareous concretions; one of the bronchial glands also was filled with calcareous matter. The right lung was in a state of general engorgement, and some spots of ulceration were detected in the cæcum.—*February* 12, 1848.

7. *Empyema; Phthisis.*—Mr. Adams detailed the following case, and exhibited the morbid specimen. Thomas Snell, aged 21, of a strumous aspect, was admitted into the Richmond Hospital on the 1st of July, 1847; he stated that several members of his family had died of consumption; he complained of some difficulty of breathing, much increased on making any exertion, and of palpitation of the heart. When his chest was exposed, the heart was seen to pulsate on the right side of the sternum; the right side of the thorax was naturally raised and depressed during respiration, while the left side was motionless, and the intercostal spaces seemed as if protruded from within. The measure of the left side of the thorax exceeded that

of the right by one inch and a half. On placing a hand flat on each side of the thorax, and desiring the patient to reply to several questions, his voice was felt to cause the right side of the thorax to *vibrate strongly*, while no *vibration* whatever was communicated to the left side.

The right side of the thorax sounded well on percussion, except beneath the right clavicle, where some little dulness was appreciable. The left side was universally dull. This dulness even transgressed the median line of the sternum, and bronchial respiration was audible when the ear was applied to the posterior part of the left side, while in most of the right lung the respiration was puerile. His pulse was 92; respiration 28 in the minute; his tongue furred. He stated that he could lie better on his left side than in any other position; that his cough was occasionally troublesome, but without expectoration. The previous history of his case, as told by himself, was, that he had got a severe cold which confined him to his bed for three weeks, and that since this attack he had never been free in his breathing, or without cough.

The diagnosis was, that the man had now extensive effusion of fluid, which was probably of a purulent nature, into the left side of the thorax, which had displaced the heart; but that, at the same time, there were strong reasons to apprehend, from his general aspect and many of his symptoms, particularly the dulness on percussion under the right clavicle, that tubercular consumption had set in in the right lung.

Treatment.—As the symptoms belonging to the effusion at the left side were by no means urgent, we did not think it prudent, under such unpromising circumstances, to resort to any surgical operation for the evacuation of the fluid from the sac of the pleura, more particularly as the right lung could not now be benefited by any such operation, and, besides, the patient had not been yet subjected to medical treatment for the effusion. He remained under observation in the Richmond Hospital for fifteen days, during which time blisters were applied, and the surfaces which had been vesicated were dressed with mercurial ointment. Active diuretic medicine, combined with five-grain doses of the hydriodate of potass, three times a day, were also directed.

On the 16th of July he left the hospital for the country, somewhat improved in health.

In about ten weeks after this he returned to the hospital, viz., the 30th of September. He stated that he had continued to improve in the country until lately, when he complained of troublesome cough, and was always either affected by sweating or diarrhœa; his pulse was remarkably small, weak, and 108 in the minute. He now laboured under well-marked hectic fever, the cause of which we concluded to be the progress of tubercular consumption in the right lung. The effusion into the left side of the thorax now gave us no anxiety. The heart, although still beating much to the right of its normal position, had returned somewhat towards the left; the

measurement of both sides of the thorax was now equal. There was no longer protrusion between the ribs; however, there was still the same dulness on percussion, and other evidence of fluid in the left pleura, as before, although, from the partial return of the heart towards its place, the flattening of the intercostal spaces, and the diminution in capacity of the left side of the thorax, it was evident that it had much diminished in quantity, and was in progress of being absorbed.

The treatment was now chiefly directed to the state of the *right* lung, and to the most troublesome symptoms under which he laboured, namely, the cough and diarrhœa. Having failed to relieve the symptoms, we advised him again to return to his native air. Before his leaving the hospital on the 20th of November it was ascertained by measurement that the left side of the chest was less, by half an inch, than the right. On examination by the stethoscope, placed underneath the right clavicle, a muco-crepitating râle was distinctly heard.

In two months more, that is, on the 22nd of February, he was for a third time re-admitted into the hospital. He now had all the appearance of a person in the last stage of phthisis; his pulse 120, and occasionally 140; much dyspnœa and cough, with purulent expectoration: he was always affected either by diarrhœa or by perspiration. During the patient's absence in the country the affection of the left pleura had undergone a remarkable change; he had noticed before he went home that the left side of the thorax had been undergoing the usual process of contraction, as the fluid was becoming absorbed. Yet, notwithstanding this solitary sign of improvement, while he was in the country an abscess pointed posteriorly on the left side of the thorax, which a surgeon opened, and through the opening the left cavity of the pleura was relieved of an enormous quantity of purulent matter. The effect of this, he said, was to render his breathing somewhat easier. A fistulous opening, which sometimes closed for a day or so and then re-opened, was observed posteriorly between the ninth and tenth ribs of the left side. The whole of this side was now clear on percussion, but no vibration of the voice nor respiratory murmur was heard.

As to the right lung, we were now prepared to expect phthisis here in an advanced stage, from the symptoms we knew he had two months before he left the hospital. That these fears were too truly realized will appear from the following note in the Case-Book, dated the 25th of February: "*There is gargouillement distinctly heard underneath the right clavicle;* he has profuse diarrhœa, troublesome cough, with puriform expectoration." Another note, taken on the 7th of March, runs as follows: "The fistula which communicates with the sac of the left pleura has closed for the last two days, and now the lower part of this side of the chest is dull on percussion; the dyspnœa is increased; the diarrhœa has not been checked; the pulse is very weak; the extremities cold: the patient believes himself dying." On the 8th a quantity of purulent matter again made its way out

of the external opening; he thought that this evacuation relieved his oppression, but he gradually became exhausted by hectic fever, with a diarrhœa which nothing could control. He died on the 21st of March.

Autopsy.—The heart did not incline at all to the left side of the thorax, but seemed placed nearly vertically in the middle line; the left pleura contained nothing but air and a little purulent fluid, which gravitated posteriorly; when this was removed, a small, round, ulcerated opening, a few lines in diameter, with some lymph around it, marked the orifice through which the fluid of the empyema had escaped: this opening was placed posteriorly near the angle of the rib on the left side, at the ninth intercostal space. The pleura seemed universally whitish and opaque, but no flakes of lymph were observed coating it. Placed along the side of the posterior mediastinum, and compressed towards the spine into an incredibly small space, lay the left and nearly obliterated lung; it was at first concealed from view by the opaque pleura, which bound it down; when this was dissected off, the lung appeared to be about five inches in its longitudinal axis, and one inch thick from before backwards; its breadth did not exceed two inches. This diminished lung, in its colour and apparent structure, resembled much the lung of a full-formed fœtus; it contained no air; it sank in water; it had somewhat the appearance of the organ in an early stage of red hepatization, but contained no serum, and was not in the least friable, as the hepatized lung is.

The right lung, at its apex, was hollowed out by numerous small tubercular excavations containing purulent matter, and was adherent hereabouts to the parietes of the thorax; lower down there was tubercular infiltration; and lower still, the lung was emphysematous.

The rectum and colon presented a remarkable granular appearance of the mucous membrane; a few spots of ulceration were here and there visible.

The foregoing is the history of a case of chronic pleurisy of the left side of the chest with purulent effusion, complicated with tubercular disease of the right lung. On making the *post mortem* examination, we find that, although the lung was compressed by the effusion, and bound down to the spine by the thickened pleura, and from these causes had been rendered incapable of performing its functions, still that no trace of any tubercle whatever could be discovered in it; while, on the contrary, the lung of the opposite side was universally affected by tubercle. Hence, it is reasonable to conclude that the attack of tubercular disease in the right lung was secondary to the invasion of the chronic pleurisy with effusion into the left pleura.

Although it does not follow, as a matter of course, that because the development of tubercle in the right lung so immediately followed on the pleurisy and effusion, which caused the obliteration of the left, that the latter effect became the source of a tubercular dis-

case of the right, still it may be interesting to inquire what influence the pleuritis and its consequences had on the development of tubercular disease in the lung which had been affected by this disease. In my opinion, the depressing influences in the system produced by pleurisy, with empyema, were greatly calculated to expose a patient to the invasion of tubercular disease, more particularly when this patient confessedly had a constitutional predisposition to this affection. Let us also bear in mind that when one lung had been so completely annihilated, as to its functions, as it was in this case, that the other, of necessity, became called upon to perform a double duty. The result of such inordinate compensatory action must have been to excite disease in this lung. I may here remark, that this is the second case I have seen within these few months of fatal tubercular development in one lung, following on pleuritis with effusion into the sac of the opposite pleura. If, then, it be considered that the compression of the lung by the fluid effused into the inflamed pleura, and the mechanical binding down of the compressed lung by the thickened membrane, produce such evils on the opposite lung, it becomes necessary for us to inquire how could these effects be prevented or remedied. The suggestion immediately occurs, that the early evacuation of the effused fluid, by the operation of paracentesis of the thorax, might release the lung from pressure, and if the operation be performed before the pleura becomes much thickened, that there would be the less danger of obliteration of the subjacent lung being perfected. It is foreign to my object, and unsuited to this place, to pursue such an object as this just now; but whether these theories may be supposed to favour the early operation or not, the choice was not, in this case, left to us, whether we should practically adopt such views or not.

When the patient applied at the Richmond Hospital, he had a very cachectic aspect, and from the signs already mentioned we were satisfied that an effusion, to a large amount, existed in the left pleural sac; we considered the fluid was of a purulent nature, and under all the circumstances of the case, thought that its absorption was, to say the least of it, very problematical; on the other hand, we did not see any reason to urge us to have immediate recourse to active surgical interference with the case, because the dyspnœa was not by *any means distressing;* we thought also, that the effusion was so great, and had existed so long, that even if the fluid were removed, the compressed lung would not be able to resume its form and function, and under these circumstances the principal result of the operation would be merely the substitution of atmospheric air in the cavity of the pleura for the fluid removed. The cachectic aspect of the patient, his own history of the family predisposition to phthisis, and, above all, the dulness perceived on percussion on the infraclavicular region of the right side, betraying the existence of tubercles there,—all these rendered the prognosis most unfavourable, no matter what course was pursued, and prevailed with me in deciding against having immediate recourse, on his admission, to the operation

of paracentesis thoracis. The patient, therefore, was subjected to medical treatment, which appeared for a time to be followed by a good result; certain it is, that absorption had commenced, and in some degree had proceeded, as the gradual diminution of the capacity of the left side of the chest, and partial return to its place of the heart, proved. In a word, so far as the empyema was concerned, the case seemed to proceed favourably; but then the patient's health became deteriorated by the advance of tubercular disease in the right lung, and then the affection of the left side underwent a new change. The purulent fluid had itself made its way out of the cavity of the chest, and, elevating the skin, pointed posteriorly. The medical attendant opened the abscess, and through this opening a large quantity of purulent fluid, from the cavity of the pleura, escaped, and from day to day this side of the chest diminished in size, and a fistulous opening remained; but it does not appear that the patient was benefited by the occurrence, as colliquative symptoms soon set in, and these, with the advance of tubercular disease in the right lung, soon proved fatal.—*April* 1, 1848.

MEDICAL MISCELLANY.

Case of Hypertrophy with Abscess of the Pituitary Body. By T. P. Heslop, M. D.

The following brief account of this very uncommon lesion occurring in a body so little understood as the pituitary body, I think it useful to put upon record.

J. H., twenty-six years of age, an engineer, of active habits, and subject to exposure to bad weather, was attacked with most acute pain in the head on the 11th of February, 1848, after dancing almost all the night previously. Though up to this period robust, and in constant employment with the duties of his arduous profession, he had been very delicate in early youth, and inherited a very strong phthisical predisposition. Subsequently, it was remarked to me by a friend who had opportunities of seeing my patient daily, that for six or eight weeks before he had exhibited an extraordinary tendency to sleep. If he sat down, he would immediately fall into a heavy sleep, almost amounting to stupor; but the sudden supervention of the acute pain referred to was the first symptom that attracted attention to his condition. After using some domestic remedies for a day or two, such as constantly bathing his forehead with cold diluted vinegar, from which he derived no benefit, he sought medical advice. He was then treated for "bilious headach," with some simple medicines, and in a few days the pain was very much relieved, and the slight concurrent feverish symptoms disappeared. Unfortunately, he now persisted in examining his busi-

ness papers, and committed some dietetic errors; these imprudences were followed by a return of the pain with renewed force. Now, too, he began to be excited, restless, and to talk wildly ; or, on the other hand, he would lie in a state of semi-stupor, silent, and absolutely indifferent to everything around him. His pulse became quick, and he lost all appetite ; still his attendant thought the case one of no great importance,—a kind of stomach derangement, and so on. In health he had a jocose, wayward, and half-mischievous way about him; and, it must be confessed, his wild talking appeared very easily to be only an exaggeration of his ordinary manner. In the midst of all this,—four or five mornings after the renewed attack,—he stripped himself perfectly naked, jumped out of bed, and passed a stool on the floor while standing before his attendant and the physician. This was a "glaring instance." The joke-theory scarcely comprehended this. Consultations were held, mercury given vigorously, leeches and blisters applied. Nothing gave a decided check to the progress of disease, and he fell into a state of profound coma. The pulse became intermittent and very slow, some days even below 40 in the minute. It was now believed that he was in fever. Matters certainly came to a *crisis* on the evening of about the eleventh day after the supervention of distinct symptoms. His pulse became almost imperceptible,—extremities cold,—hands convulsively clenched,—jaws so firmly closed that, but for the cavity left by the loss of a tooth, nothing could have been poured down the throat. Wine was given freely, yet with caution ; another blister was applied to the back of the neck, and from this day a gradual improvement took place, doubtless ascribable to the mercury which had commenced to affect the mouth, and the other judicious means which had been employed. My own personal knowledge of the case dates from this period. With careful support and stimulation he rapidly rallied, and, though occasionally retrograding and showing some of his former bad symptoms, twelve days afterwards he was so rational, and had so good an appetite, that I confidently predicted an early and complete recovery. Yet two symptoms remained which caused me some misgivings. One of these was an almost total loss of memory ; a few minutes after taking a glass of wine he would utterly forget having had it. No evidence, no chain of facts could induce him to believe he was in Ireland and not in Sussex, where he had spent a few days two or three years before. The other ill-ominous symptom to which I refer was loss of power over the sphincters. Now and then he would give signs that he wished to pass a stool, but the rule was, that it was voided unconsciously and without warning; and when he occasionally did ask for the urinal, it was almost certain that he would pass water before the attendant could give the utensil to him, so sudden and urgent was the impulse to evacuate the contents of the bladder. However, he was deemed sufficiently well a fortnight afterwards to undertake a journey of sixty miles to Dublin; upon arriving in which city he was put under the care of Dr. Stokes. It would be wearisome to go into anything like a detailed description

of the many phases of a chronic and ever-varying disease; it may suffice to state, that he soon altogether lost control over the sphincters, that he progressively emaciated, and that his memory appeared to have almost vanished; still, when tolerably well, he retained a considerable amount of intelligence, and frequently answered questions quite coherently, though so unwilling to speak that whole days would pass without his saying more than "yes" or "no" occasionally. The idea irresistibly conveyed to the mind was, that had the single faculty of memory been perfect, the intellect would have been sound. With the exception already given, he had paralysis of only one muscle—the orbicularis of the right eye-lid, which for several months before his death he did not close, sleeping or waking. The acute pains in the head never forsook him. Sometimes several days passed over without these attacks, but they were rarely more than two days apart; these always came on suddenly, when the face instantly became of a scarlet hue. While strong enough he raised his hands to the head and gave a look, and uttered groans, too distinctly pourtraying the agony of the moment. The paroxysm rarely lasted more than ten or fifteen minutes, and was always succeeded by a profound stupor of some hours' duration. At various periods he suffered also from severe cramps of the lower extremities. Towards the end of August it became obvious that the strength was nearly exhausted; but he was destined to give another illustration of the law that chronic disease kills by giving the predisposition to an acute one. An obscure attack of pleurisy came on, of which he died on the 4th of September.

Autopsy, thirty Hours after Death.—The body was extremely emaciated; upon taking off the calvarium the membranes covering the hemispheres of the brain appeared quite healthy; we then proceeded to detach the brain from the base of the skull; when we arrived at the second pair of nerves, we found them almost surrounded by a softish, dark grey tumour, about the size of a large walnut, occupying the position of the pituitary body on the sella turcica, but extending much beyond the space usually held by that body both posteriorly and laterally; it was very carefully dissected from the dura mater and surrounding structures, but not without slightly lacerating it and giving exit to a small quantity of thick, dark red, purulent-looking fluid. Having taken the brain out of the skull, and turned its base upwards, we examined the exact relations of the tumour; in this position it filled the entire interpeduncular space, extending backwards to the pons varolii, forwards and laterally protruding into the commencement of the fissure of Sylvius; the crura cerebri were distinctly pressed *outwards*, so that the space just referred to was greater than natural; it could be easily raised from its position after dissecting off a few delicate cellular bands, having no other connexion with the brain than through the pituitary body, which seemed lost in the tumour: or rather this latter seemed a *cystiform enlargement* of that body containing the purulent-looking fluid I have already described. Underneath the tumour we

observed a small quantity of thin fluid, of a slightly reddish tinge, upon drawing off which we remarked that it was but the surface of a more deeply situated fluid, contained in the lateral ventricles. Twelve or fourteen drachms were measured, but probably an equal quantity lay on the base of the skull, of which no note was taken; in fact, the tumour occupied not merely the floor, but almost the entire cavity of the third ventricle; the anatomical relations of the former were precisely identical with those of the latter. The quadrigeminal bodies, we thought, seemed flattened in the antero-posterior direction by the pressure of the tumour.

When we add an increased firmness on section of the medulla oblongata, and slight opacity, with thickening of the arachnoid, over the middle lobes of the base of the brain, we have mentioned all the morbid appearances in the encephalon. But we must record the fact that the bones entering into the formation of the middle fossa of the base of the skull had, scattered over various parts of them, curious little stalactitic processes or exostoses, varying from one to three or four lines in length: the elevations, too, corresponding to the sulci of the middle lobes of the brain, were extremely sharp and angular. I shall not stop to inquire whether these had any, or what share in the production of the remarkable disease under which this gentleman suffered. No tubercle could be found in the lungs. There was a considerable amount of recent lymph over the base of the left lung and corresponding surface of the diaphragm.

Two Cases of Acute Glanders in Man. By Henry Graves, M. B., F. R. C. S. I., Cookstown Dispensary.

In the long catalogue of suffering there is no disease more painfully or more hopelessly interesting to the physician than glanders, when it appears in the human subject. Since the year 1821, when the attention of the profession was first directed to these cases, so many reports have been published in various periodicals, both at home and abroad, fully corroborating the views advanced by Dr. Elliotson and others, as to the communicability of this disease to man, that at the present day no one has a reasonable doubt on the subject. We must, however, regret, that, though much has been written, as yet little advance has been made in the treatment of those miserable sufferers.

The two following cases are recorded in the hope that they may elicit further information. Possibly those who have not heretofore seen the disease may recognise it by their attention being again called to the peculiar appearance of the areola here noticed, confirming in every particular the accurate description given by Dr. Bigger(*a*), and by Dr. M'Donnell of the Richmond Hospital, in a case quoted by Dr. Graves(*b*). As I am of opinion that in glan-

(*a*) Dublin Med. Jour., First Series, vol. xv. p. 476.
(*b*) Clinical Medicine, second edition, vol. ii. p. 332.

ders human aid (as far as our present knowledge extends) is powerless, further than in some degree to alleviate suffering by the judicious employment of opiates, medical men are bound to give the earliest intimation to the relatives of the patient of his almost hopeless state. It is only in the commencement of the disease that the mental faculties are unimpaired; and, to lay aside all religious considerations, it may be necessary to arrange a thousand worldly affairs which must occupy more or less time: besides, the careless use of clothes, sponges, basins, &c., may cause the loss of more than one life. How valuable then is an early diagnosis!

Case I.—Michael Magurk, aged 45, a strong, healthy man, of remarkable muscular development, was attacked on Tuesday, 11th April, with rigors, pain in the head, joints, and back, restlessness, and excessive thirst. I saw him on the 16th, his friends supposing he had fever, and found him in the following condition: expression of countenance heavy and stupid; eyes watery; conjunctiva somewhat suffused; skin hot and dry; tongue covered with a thick creamy fur; bowels confined; pulse 72, soft and regular; he complained of extreme thirst, and dryness of the fauces, pain in the back, shoulders, neck, and arms, particularly on the left side. I found that he had "a sore hand," which did not seem to give him much annoyance; however, on examination, I was so much struck with the remarkable appearance presented by the ulcer and a *small pustule* on the hand and back of the wrist of the patient, that I at once, perhaps rather abruptly, asked, "had he been employed about sick horses?" and, being answered in the affirmative, without hesitation formed an unfavourable prognosis on the case. It is not easy to convey an accurate idea of the ulcer and pustule that so strikingly arrested my attention. The former was situated on the outer side of the left hand, about the middle of the metacarpal bone of the little finger, in size nearly as large as a half-crown piece, of a blackish purple in the centre, shading down at the edges to red, and beyond this there was a distinctly elevated ridge or *wheal* of white; the integument had given way, and from it exuded a thin, ichorous discharge; the latter was on the back of the wrist, not larger than a split-pea, with a yellow summit, surrounded by a red base, and, external to all, the *hard, elevated, white ring*, which may be looked upon as perfectly distinctive in glanders. At the bend of the elbow a small enlarged gland could be felt, and a second was perceptible in the axilla; these were but slightly painful to the touch, and I could not trace any hardened or enlarged lymphatics leading up the arm. On the previous Sunday he assisted in skinning a horse that died of glanders, having at the time a "hack on his hand." I ordered a poultice to the sore; effervescing draughts *ad libitum;* and two aperient pills at bed time.

On the 18th he was extremely anxious about his illness, and expressed great fears as to the result; he complained of *intense thirst*, general lassitude; severe pain in the back; with frontal headach, and dryness of the nose; he was very restless during the night, and

raved a little; pulse 79; the tongue was heavily coated, and the bowels still rather confined. His hand had been constantly poulticed, and, he assured me, it was not at all painful, though, on examination, I found that some amount of sloughing had taken place in the centre of the ulcer: his hand and fore-arm were considerably swollen. Four pustules had come out on his chest, exactly similar to the one before described, each surrounded by the peculiar elevated, hardened, and white zone; the glands in the axilla and bend of the arm did not seem to be larger than on the 16th; he complained greatly of pain and heat in both his ankles, calves of his legs, and knees; each joint was somewhat swollen, and the integuments were rather redder than natural. Ordered to take a small quantity of stimulant (punch); an opiate at bed time.

As this man lived a considerable distance from my residence, I was unable to visit him till the 20th, when I found that a very marked change had taken place: his features were pinched and anxious; he lay bathed in perspiration; and, since the previous day, had suffered from profuse diarrhœa; upwards of twenty offensive, slimy stools had been passed within twenty-four hours; his tongue was covered with a yellow fur, the papillæ at the edges much elevated; pulse 120, weak; thirst unquenchable; pain in back and head (frontal) unabated; restlessness very great; he slept but little during the last two nights, and raved almost incessantly, though when spoken to he answered in a rational manner; the chest, arms, and legs, were covered with a crop of pustules in all stages,—some just formed, with a minute vesicle in the centre, apparently filled with serum, in others more advanced, the vesicle containing pus, while in a third set (few in number) the pus had become dry, the scale had fallen off, and a depression was left in its place, seemingly covered with a thin pedicle from which a watery fluid exuded; *all*, however, were surrounded by the characteristic circumferential *wheal*, more or less plainly marked, but the more advanced the pustule the less evident was this appearance; his joints were much swollen and exceedingly painful; the calves of his legs, quite black, seemed as if they had been severely bruised. Sloughing of the hand had proceeded to great extent; the metacarpal bones were visible at the bottom of the sore, from which the discharge was highly fetid, dark, grumous, and profuse; a number of soft, ash-coloured, gelatinous granulations were springing up from the bones; these broke down when touched by a probe. He had a slight cough, and complained of "a stuffing in his nose, and a bad smell;" there was slight discharge of thin purulent matter from the left nostril, and a trifling swelling and redness of the corresponding cheek. I ordered an astringent mixture; an opiate at bed-time; an effervescing draught; port wine and water during the day.

21st. All the symptoms aggravated; no sleep; delirium almost constant; diarrhœa unabated; tongue brown, dry, and tremulous; teeth covered with sordes; thirst most distressing; pulse 110, weak

and irregular; face red and much swollen; great discharge from both nostrils, and from the left eye, which was quite closed; his legs and arms were swollen and discoloured; effusion had taken place into all the larger joints. In a lucid moment, on being questioned, the unfortunate patient exclaimed: "Oh, give me sleep; I am pains all over; you could not lay a finger on a part that is not sore." The stench of the apartment was so great that I was glad to hurry away and breathe a pure atmosphere.

22nd. He died about six o'olock in the morning. I was informed that shortly after my visit he fell into a state of coma, and lay perfectly insensible till released from his sufferings, thirteen days after the introduction of the virus into the system, and eleven from the first appearance of the symptoms. No *post mortem* was permitted by the relatives.

Case II.—Owen Conwell, aged 38, a strong labourer, assisted in skinning the same horse by which Magurk was infected, and, being a country farrier, examined the lungs and intestines of the animal. I could not learn that he had any cut or abration of the hands at the time, but a slight scratch would easily escape notice; and being brought much in contact with the diseased mass it is not difficult to trace the introduction of the virus into the system. On the night of Monday, 10th, he was attacked with rigors, pain in the back and head, and great thirst; he slept little, and was very restless. On the 16th I visited him; he was then complaining of great pain in the right arm and shoulder, which was much swollen and red, the redness disappearing under the pressure of the finger, and conveying to the touch a "boggy" feel. There were several pustules, exactly similar to those described in Magurk's case, on his chest and arms, and one on the right cheek; these, he said, he first noticed on the previous day. He suffered great pain in his shoulder and back, and indeed in nearly all his joints; his thirst was insatiable; tongue dry and furred; pulse 96; some tendency to diarrhœa, but this was supposed to arise from one or two doses of salts which he had taken at the commencement of his illness: he was extremely anxious about his condition, alarmed by the reports that had reached him of my other patient.

I was able to visit this man only once again, namely, on the morning of the 20th, he was then evidently *in articulo mortis*, running profusely from the nose and right eye, covered with pustules; and, from all I could learn, the two cases seemed to progress *pari pasu;* the diarrhœa was persistent; coma came on during the night of the 18th, and he expired a few hours after I saw him. No *post mortem* was allowed.

The similarity of these two cases in their symptoms, progress, and event, must strike the most superficial observer. Both were infected by the same animal, at the same time, and under circumstances of the same kind; in both the virus lay dormant for only a few hours; they were attacked by the first symptoms of their dis-

ease within a short period of each other; the eruption appeared in both on the *fifth* day from inoculation; and even in the date of their death there was little difference.

I will not trouble the readers of this Journal with any remarks on the "differential diagnosis" of a disease which has not unfrequently been mistaken for acute rheumatism, fever, &c. &c.; but, in concluding, I may be permitted once more to point to the "*circumferential elevated white zone,*" *external* to the redness, surrounding the pustule; when this appears, I think the practitioner need have little hesitation in declaring that his patient is suffering from one of the most fatal maladies with which we are acquainted.

Cases of Injury of the Head. By J. Purefoy, M. D., Cloughjordan.

Severe Case of Concussion of the Brain.—J. R., aged 26, was severely beaten with a spade-handle about seven hours before I visited him, on the 17th of August, 1847. Complete insensibility, with loss of speech and vomiting, followed immediately upon the injury being inflicted.

At visit he was found pale and cold; pupils contracted but moveable: pulse 60, small, compressible, and regular; respiration slow and oppressed, but not stertorous. A cut was found extending across the vertex, about an inch and a half in length, and a soft, diffused tumour, of the size of a crown piece, immediately above the left ear: but no fracture could be discovered. On the 20th inst. convulsive movements of the muscles of the face were observed, recurring two or three times in the course of an hour. Whilst these convulsive movements continued the pupils slowly dilated to a considerable degree, and as they subsided the pupils gradually returned to their previous contracted state, leaving the patient in profound stupor. From the occurrence of the convulsions the stupor had much increased; the patient passed into complete coma, discharged the stools and urine involuntarily, although, up to this period, he was able to stagger out of bed when he felt a desire to empty the bowels or bladder, being unable, however, to call any person to his assistance. On the 23rd inst. the tumour of the scalp was opened by a triangular incision, and a few clots removed from beneath the detached scalp; but neither fracture nor depression could be discovered, nor any appearance whatever of disease of the bone or of its covering. The convulsive attacks continued, with complete coma; pulse 60, full, and of good strength, whilst in the recumbent posture, but increased to 84 when the patient was raised up to the sitting posture. The treatment consisted in free and repeated bleeding from the arm, leeches and cold applications to the head, together with purgatives and alterative doses of calomel, with tartar emetic. On the 29th inst., just twelve days after the receipt of this dreadful injury, the patient made an effort to answer questions when loudly spoken to; his pulse had gradually got up to 84 in the minute, although the pupils continued widely dilated for some days longer.

From this date convalescence, although very slow, was progressive; the patient made an excellent recovery, and I am not aware that he continued to feel any injurious effect whatever in consequence of the injury.

Fracture with Depression; injurious Effects following at a remote Period after the Occurrence of the Injury.—P. C., a healthy labourer, aged 35, was accidentally struck upon the head, with much force, by a hurl, wielded by an athletic young man, whilst hurling, early in the month of March, 1847. He was knocked down and rendered quite insensible by the blow, and suffered from vomiting for two or three days after the accident had occurred, accompanied by coma, slow, labouring pulse, and paralysis of the *right arm*, the blow having been struck just above the left ear. The most active antiphlogistic treatment was employed for ten or fourteen days, together with the use of mercury to affect the gums; and at the end of a month the patient was apparently restored to perfect health. The only unpleasant symptoms remaining were, a slight sense of numbness in the right fingers, extending along the arm, together with an unusual irritability of temper. He followed his usual avocations and enjoyed excellent health until the following October, when one morning, unfortunately, he was thrown into a state of the most violent mental excitement, after having endured much bodily fatigue. The immediate effects were that he fell down in a fit of epileptic convulsions, when he was promptly bled and purged, with temporary relief, but from this date he became an irritable and unhappy epileptic. The premonitory symptoms were remarkable; the eyes became bright, animated, fixed, and slightly suffused; a distinct tingling sensation, proceeding from the fingers upwards, along the right arm, and into the right cheek, which becomes slightly convulsed, the angle of the mouth being drawn towards the right ear, then follows immediately the epileptic fit. On examining the head there appeared a depressed fracture of the skull, of an oval form, fully an inch and a half in length, and an inch and a quarter in breadth. The existence of this depressed fracture was ascertained during his first illness, but as the integuments were whole and sound, and that, at the same time, the bad symptoms yielded to the treatment employed, it was considered inexpedient, in consultation, to attempt to raise the depressed bone by means of an operation.

In the first case, that of concussion of the brain recorded above we have a remarkable combination of symptoms indicating primarily concussion, and at a later period, compression of the brain. The early symptoms,—insensibility, coldness of the extremities, oppressed and feeble pulse, with vomiting,—indicated the occurrence of concussion; whilst, subsequently, convulsions coming on, with a dilated and immoveable condition of the pupils, and profound coma, would seem to point out pretty clearly that there existed a depressed fracture of the skull, or that extravasation of blood had taken place,—in either case causing undue pressure of the brain at some point.

Reasoning thus, it was deemed right to cut down upon the injury, in order to ascertain the existence of depressed fracture; but as there did not exist any depression of the bone, it was determined not to proceed further with the operation. The cause of the convulsions and coma, in this case, can merely be conjectured; perhaps a slight extravasation of blood had taken place into the substance of the brain, and subsequently became absorbed under the influence of mercury, and the active treatment pursued.

The next case of injury of the head affords an instructive example of the very remote period from the receipt of the injury at which severe and distressing symptoms may follow; further, it proves the propriety of raising depressed fracture of the skull occurring in the adult subject, when the operation is practicable, in order to avoid the unhappy consequences which followed in the present instance. As the scalp *was not wounded*, and that the symptoms yielded to milder measures, it was considered prudent to avoid the risk of a severe operation; yet the result proved that the raising of the depressed fracture might have altogether averted the bad effects which followed upon this injury. Considered in a physiological and moral point of view, the case is interesting, as exhibiting the influence of mental emotions upon the heart and general circulation; and, again, the injurious effects of an over excited circulation upon a brain already predisposed to diseased action.

Letter on the Contagiousness of Cholera. By R. J. Graves, M. D.

Merrion-square, October 16, 1848.

Dear Sir,—In consequence of the appearance of cholera in England since my communication in the present Number of your Journal was printed, I beg leave to make the following additional observations on the progress of that disease:

As soon as cholera was established in Hamburgh, it appeared evident to us who advocate its contagious nature, that it was likely to be brought in trading vessels to the ports in England which have the most intercourse with that city; and what has been the fact? In those very ports, viz., Sunderland, Hull, and London, the arrival of cholera has been officially announced!—while not a single case has occurred in any of the numerous villages and small fishing towns on the coast of England between Sunderland and Hull, or between Hull and London. And why have all these towns and villages, which, on the hypothesis of the diffusion of cholera by the spread of some peculiar atmospheric influence, must have suffered quite as early from this influence as any of the three cities actually affected, —why, I ask, have they escaped? The answer is obvious,—*because they have no direct communication with Hamburgh.*

A melancholy instance of the evil and fatal effects which inevitably follow from an obstinate adherence to the doctrine of the non-contagiousness of cholera, is at this very time exhibited in a convict ship moored in the Thames. A prisoner is attacked with cholera; what means are taken to prevent its affecting his associates? Why

they are furnished each with a certain daily allowance of tobacco, and it is soon after announced in all the papers that the smoking has proved quite a luxury to them, has had the best effects on their spirits, and has effectually neutralized the fluviatile malaria. The triumph has been but short-lived, and King James himself could not have sent forth a more effectual counterblast against tobacco than that which issues from the spirit of the following paragraph :

"*Woolwich, October* 13, 1848.

"The cases on board the convict ship Justitia, up to this day, are twenty-five, six new cases having been reported during the previous twenty-four hours; of that number five have died, and one has been discharged; the other eighteen are not apparently in any immediate danger, but are so debilitated that their medical attendants have not considered themselves justified in entering them on the list of recoveries."—*Standard*, October 14th.

Of course the Government Commissioners will consider this spreading of the disease in a crowded hulk as a decisive proof of its non-contagiousness!! as they have already done with regard to a ship which arrived at Hull. From their report on the latter case, it appears that sailor after sailor died of Asiatic cholera during the voyage from Hamburgh, *because*, forsooth, they indulged in eating plums and drinking cider. Such indulgences were not likely among the convicts on board the hulk, who used nothing unwholesome until they were set smoking by authority !

It is some satisfaction to find that Oxenstiern's *parvula sapientia* presides over the sanitary affairs of Great Britain; for as soon as it was ascertained that the cholera had safely arrived in London, *viâ Hamburgh*, the authorities immediately interfered, and quarantine was established between the two cities !

In conclusion I beg leave to repeat, that the unanimity of all Government officials called on to report on the non-contagiousness of cholera, is a striking proof that nothing is impossible to English *Capital.*

I remain, dear Sir, faithfully your's,

Robert J. Graves.

To the Editor of the Dublin Quarterly Journal.

Cases of acute dry Gangrene of the Fingers. By Maurice Henry Colles, L. R. C. S. I.

It is the duty of every medical man to put on record curious or anomalous facts. This must serve as my apology for intruding on the profession the notes of three remarkable cases which fell under my notice in the hospital of St. Louis, at Paris, under the care of M. Jobert. They occurred at a period when north-east winds had prevailed for some days ; and at such times, in consequence of the close proximity to Montfaucon (the common cess-pool of Paris), hos-

pital gangrene and erysipelas are very prevalent; and, in fact, during the fortnight, there were several cases of both in St. Louis, and afterwards at the Hotel Dieu; and about the same time a good deal of puerperal fever at the Maternité. The simultaneous appearance of all these unhealthy forms of inflammation—"Talis Hyperboreis aquilo cum densus ab oris incubuit"—has often been there remarked on; and when the wind does not continue long from that quarter, by closing the windows on that side of St. Louis, they generally escape the infection. Whether the miasmatic poison had anything to do with the production of the unusual form of inflammation which I am about to describe, every one must decide for himself: it certainly was the general opinion of those on the spot that it had, though the exact *modus operandi* none could better explain than by the vague term of constitutional effect; and yet constitutional disturbance occurred only in one of the individuals, and, in his case, evidently from a metallic poison.

Case I.—A man aged about 30, healthy, and strongly made, a servant to an artist, his occupation being to clean his master's studio, palette, brushes, easel, &c., one morning pricked the ball of his right thumb with a nail, but not more than skin deep. Shortly after he was sent to clean a very dirty palette, and had to use his thumb a good deal to rub off the paints, some of which, of course, contained lead, others arsenic, mercury, &c. Towards evening he began to feel feverish and hot, his fauces dry and stiff, with a sensation of tingling heat, amounting at last to pain, in the epigastrium; irregular rigors and extreme thirst, but no pain in the thumb. Next day a small white pustule, or opaque vesicle, made its appearance on the scratch or puncture; the thumb became hot, painful, and throbbing; round the vesicle was an areola of an intense livid red. On the third day the apex of the little vesicle was hard and dry, and of a brownish colour, and the inflamed base was more extended. The gangrene continued to creep on for ten days, until the first and half the second phalanx were converted into a dry, hard, brown, shrivelled, horny substance, like burned skin, separated from the living parts by the same circle of livid red; the gangrened parts were destitute of sensation, while all beyond the line was intensely painful. The constitutional symptoms continued only until the third day, or until the local mischief was fully developed. The caustic potash and lime paste (*pâte de Vienne*) was applied all round the areola, and the disease ceasing to spread, amputation was resorted to at the second joint. The gangrenous inflammation did not return, but nearly two months elapsed before complete cicatrization took place: this was owing, in part, to diminished vitality; in part to unavoidable scantiness of the flap.

Case II.—An hospital porter, sallow and thin, aged 45, while bundling up foul linen of the hospital, pricked one of his forefingers with a pin; it felt a little sore at the time, but scarcely more than an ordinary scratch would have done. This case progressed locally exactly as the preceding; there were no constitutional symptoms

worth mentioning at any period, and the treatment only differed in that the parts were amputated in the middle of the second phalanx while gangrene was still spreading; no previous application of caustic being made. The stump was six weeks in healing, granulations springing up constantly from the cicatrix. There was abundance of covering in this case.

Case III.—An hospital nurse, about fifty years of age, thin and sallow, but healthy. The cause, progress, and treatment of this case were exactly the same as in No. 2, except that the part was amputated at the junction of the distal and second phalanges, and in ten days after the injury instead of a fortnight. The seat of gangrene was the right thumb. This was longer healing than either of the others, the flaps being scanty, the vitality impaired, and the subsequent granulations very troublesome, though small.

In comparing these cases in order to get at the causes, some circumstances are to be noted : their occurrence during an epidemic which altered for the worse all local inflammations ; the difference they exhibited from the ordinary forms both of this hospital gangrene and of poisoned wounds in general; the difficulty experienced in healing the stumps ; and the absence of all fever in two, and the presence of severe constitutional disturbance in the other, ceasing on the appearance of the local gangrene.

Letter on the Subject of intermittent Fever. From Charles Halpin, M. D., Cavan, to Dr. Graves.

Cavan, September 26, 1848.

My dear Sir,—Knowing that the subject of intermittent fever has engaged a good deal of your attention, and feeling that the communication of any facts bearing on this disease will be acceptable to you, I forward you a very brief history of several cases of ague that came under my notice within the last six months.

I should premise that, so far as my experience of this county extends, ague is a very rare disease indeed. During the last eighteen years in which I have had the charge of a dispensary, I have not met with more than one or two cases of it in which the patient had not contracted it in some locality where it was endemic.

The cases I now submit to you are merely intended to show for how long a period the disease may lie dormant in the constitution, after the individual has been exposed to its exciting cause.

In the latter end of July, 1847, the fourteen men whose cases are included in this report, went from the neighbourhood of Shadone, county Cavan, to Lincolnshire, to reap the harvest ; thirteen of them remained until the latter end of September, a period of about six weeks, exposed to the malaria of the fens. The weather was exceedingly hot, and no rain fell in that part of the country for some months. During their sojourn there they drank immense quantities of water. which they all describe as of a most unwholesome character. Notwithstanding, they all returned home in good health, and continued

so up to the first week in April, 1848. The latter end of the month of March was intensely cold, and a biting easterly wind, veering occasionally to the north-east, set in, and prevailed until the first week in May. The accompanying table exhibits its effects on the harvest-men. Seven of the party were seized, most suddenly, with ague in the first week in April; the eighth man had his first rigor on the 28th of May; and the fourteenth on the list, who remained but a fortnight exposed to the malaria, continued exempt until the 13th of August, when a violent quotidian seized him. It will be seen that just twelve months elapsed between his entrance into the fens and his consequent illness.

No.	Age.	Arrived at Lincolnshire.	Left the Fens.	Date of Attack of Intermittent.	Type of Fever.	Season in the Fens.
1	46	Aug. 3, 1847.	Sep. 20, 1847.	April 1, 1848.	Quotidian.	Second.
2	20	,,	,,	,,	Tertian.	First.
3	25	,,	,,	April 3, 1848.	,,	Second.
4	27	,,	,,	April 2, 1848.	,,	First.
5	30	,,	,,	April 1, 1848.	,,	,,
6	25	,,	,,	April 4, 1848.	,,	,,
7	45	,,	,,	April 1, 1848.	Quotidian.	Fourth.
8	34	,,	,,	May 28.	Tertian.	First.
9	41	,,	,,	October 15, 1847(*a*).	.. ..	
10	40	,,	,,	May, 1848.	Tertian.	
11	24	,,	,,	.. ..	.. ..	First.
12	26	,,	,,	.. ..	.. ..	,,
13	40	,,	,,	.. ..	.. ..	Third.
14	23	,,	Aug. 17, 1847.	Aug. 13, 1848.	Quotidian.	First(*b*).

Of the fourteen men but three have remained exempt from the disease at this date, namely, Nos. 11, 12, and 13. No. 9 had fever a fortnight after his return home, for which he was treated in the county of Cavan fever hospital; during its course he suffered severely from rigors; and No. 10, who went to Liverpool shortly after his return from Lincolnshire, wrote to his friends in Lisnaglea, in the month of May, to say that he had been very ill of ague, that he was then recovering, but still unable to resume his work at the docks.

I shall abstain from entering into the treatment adopted, further than to say that quinine formed the basis of it, and that I have found it to act most satisfactorily when combined with purgatives, as compound powder of jalap, or compound rhubarb pill, in such quantities as insured two or three discharges from the bowels daily. I first saw quinine exhibited in this way by my friend, Dr. Tabuteau, of Portarlington, at Oldcastle, County Meath, in the year 1823 or

(*a*) This patient had fever, attended with severe rigors, for which he was treated in a fever hospital.

(*b*) Four of the above had been in the fens previously, yet they never suffered any consequent illness before this time.

1824, when great numbers of the *male* population of that district suffered from intermittent fever, whilst, strange to say, the *females* escaped it altogether.

"I remain yours very faithfully,

"CHARLES HALPIN,

"*Physician to the County of Cavan Fever Hospital.*

"*To Robert J. Graves, Esq., M. D.*"

Case of Double Uterus, with Observations upon the Subject of Generation. By JOHN PURCELL, M. D., M. R. I. A.

[Read at a Meeting of the Dublin Medico-Philosophical Society, July 1, 1773(*a*).]

SINCE the last time I had the pleasure of meeting this Society, the body of a woman was brought to the anatomical theatre, who was supposed to have died in the last month of her pregnancy. Upon opening the abdomen, the uterus appeared of such a size and form as is generally observed at that period. It contained a full-grown fœtus, but was furnished with only one ovarium and one Fallopian tube, which were situated on the right side. On the left was placed a second uterus, unimpregnated, and of the usual size, to which the other ovarium and tube were annexed. But these two uteri were totally distinct and separated from each other, except at the lower extremity of their necks, where their union extended a quarter of an inch, and an acute angle was formed between them. There was nothing extraordinary in the external parts of generation, but from each side of the meatus urinarius a membrane ran downwards, and the two, having comprehended this orifice between them, were joined together a little below it, so as to form by their union a septum or mediastinum, which, taking the remainder of its origin from all that prominent ridge called the superior column, and descending perpendicularly, was inserted into the inferior column, so as to extend from the entrance of the vagina as far backward as its posterior extremity, and thus to divide it into two tubes of nearly equal dimensions. But each of them did not lead solely to the womb of its own side, for the right vagina became gradually wider as it ran backwards, and at last was so far dilated as to comprehend within its circumference the orifice of both uteri, while that on the left side, having taken an oblique direction, ended in a *cul de sac* or cæcum. Such a conformation might have rendered it totally useless; to pre-

(*a*) The accompanying most interesting case of Dr. Purcell's is extracted from the Memoirs of the Medico-Philosophical Society of Dublin, vol. iii. p. 59, of which we have already given some account, in the preface to the first Number of the present Series of this Journal. At a future period it is our intention to furnish our readers with a Memoir of this distinguished physician, who, with Drs. Plunket, Quin, and Harvey, enjoyed the most extensive practice in this city towards the close of the last century. When this paper was written, Dr. Purcell was assistant to Dr. Cleghorn, the professor of anatomy to the University.—ED.

vent which, Nature, fertile in expedients, contrived a fissure in the septum, an inch in length, and about an inch distant from the womb of that side. Thus it appears that both uteri might be impregnated through either vagina, as that on the right side led directly to both, and as, by means of the fissure in the septum, the semen could be easily thrown from the left vagina into the right, where the apertures of the two wombs were placed. Through the latter passage both uteri would seem to have an equal chance for impregnation, for, notwithstanding that which contained the fœtus was placed almost directly in a line with the axis of the right vagina, yet this, probably, was not its original position, but in process of time its bulk increased so much as necessarily to occupy the middle space, and push the unimpregnated one aside. But, however surprising it may seem at first view, yet there is reason to imagine that the right womb, though at a greater distance, would be much more apt to conceive than the other, and the left vagina only had been made use of; for when this was distended it appeared that the posterior part of the septum, by its protuberance, closed up and covered the left os tincæ, and as this would probably be the case in copulation, the semen, not finding a ready admission into it, would pass over to the right orifice, where its entrance could not be so much obstructed. So that, if we may hazard a conjecture, I think it more likely, since the right uterus only conceived, that the left vagina had been generally employed. And here I must beg leave to remark that this is a most extraordinary, and, I may venture to say, an unparalleled(*a*) instance, where a short penis would prove more effectual than a long one; for the left vagina ending in a *cul de sac*, and the fissure in the septum being at a considerable distance from its extremity, a long penis would overshoot the mark and lodge the semen in that part of it which was impervious, whilst one of moderate size, reaching only as far as the fissure, would give the seed a much better chance of being admitted. It was a prevailing opinion amongst the ancients that male children were conceived in the right side of the womb, and female in the left. Having so few opportunities of dissecting human subjects, they depended too much on the analogy of the structure of brutes, which has been the principal source of the many erroneous descriptions we meet with in their works. It is well known that the uterus of most quadrupeds is divided into two cornua, in which the fœtuses are lodged, and it was not very absurd to conclude that nature might have formed them for the distinct repositories of the two sexes. Accordingly this was supposed to take place also in the human uterus, which has been described and delineated as if distinguished into two chambers. Hence arose the opinion, which is received in some places to this day, that a very sure prognostic with regard to the sex of the child may be drawn from

(*a*) In a side note on this page we here find the following observations: "How happens it then that a woman has conceived whose hymen remained entire?—*Vide* Maur. Ob. 489 and 583."

the side of the belly on which the tumour is more sensibly felt. Dissections, being now more frequent, have proved that the human womb consists of one undivided cavity, so that the fœtus, let it come from which tube it may, will, when arrived to a certain size, occupy it entirely. This observation, however, is not sufficient to refute the supposition that each sex might have its distinct ovarium; and Morah, a modern author, quoted by Haller, pretends to determine how many males and females any animal has brought forth, by examining the cicatrices or marks on its ovaria. For, in a creature which never had produced any other but females, he found the right ovaria still full of ova, but the left quite exhausted. That this is not always the case in brutes appears from the observation of Dr. Harvey, who found male fœtuses in the left cornu, and females in the right. In the human subject opportunities of determining this matter must occur very seldom, nor do I know of any instance recorded, except one by Cyprian, where both a boy and a girl were conceived, although the right tube was wanting. But the present case affords a second example, for here the impregnated uterus had not the smallest communication with the left ovarium or tube, and yet it contained a female fœtus. The septum was not merely membraneous but fleshy, and of a considerable thickness, and, like most other mediastina in the human body, consisted of two laminæ combined; of these each vagina furnished one, for each had a constrictor of its own, and, being completely surrounded by muscular fibres, had a power of contraction independent of the other, which must be very useful, and could not be effected so well if both vaginæ were comprehended within the same muscular rings, and separated by a membrane incapable of action.

It has been the opinion of many modern authors of the first reputation, that the fundus is that part of the womb whose extent increases in the greatest proportion during pregnancy, and upon this supposition they have founded various theories. One of the principal arguments which they propose in support of their opinion is, that the insertion of the Fallopian tube is removed from the angles of the uterus, and gradually descends towards its neck, so that a short time before delivery they are at a very great distance from their former position. Haller does not pretend to deny these facts, but mentions three instances where the tubes did not change their place. But Petit, in his memoir on the cause and mechanism of childbirth, is clearly of opinion that the whole doctrine is destitute of foundation. He asserts that the fundus increases less than any other part, and that the surprising growth of the womb is effected by a fresh supply of fibres successively furnished by the neck and parts adjoining. As a decisive proof he insists that the insertion of the tubes continues nearly in the same place, and accounts for the error of the above-mentioned authors by observing, that as the fundus is pushed upward by the growth of the other parts, a greater portion of the tube will adhere to the surface of the tube, and then the apparent place of insertion be very far distant from the real one. This remark is verified in the pre-

sent instance, for the tube at first sight appears to penetrate into the middle of the uterus, but upon a closer inspection, and by introducing a bristle, it is found to run for a considerable space between it and the coat which it receives from the peritonæum, and at length to enter into its cavity not very far from the spot it may be supposed to have occupied before impregnation.

With regard to superfœtation, it is evident how easily it might have been in the present subject: and the supposition of a double uterus can easily account for it on many other occasions; but this is matter on which it would be needless to dwell longer, as it has been very fully treated in Gravel's dissertation, published in Haller's collection, where we meet with a similar instance of two uteri and a vagina, the anterior part of which was divided by a septum, but whose posterior portion was single where the septum was discontinued. Haller, in his Opuscula Pathologica, gives the history of a young lady of quality, who had two wombs, each of an oval shape, and furnished with its own peculiar vagina. One of these vaginæ was anterior, and communicated with the right womb, the other was posterior, and led to the left; and it is worth observing, that in these two cases, and in most others of the same kind which have been hitherto observed, each uterus had only one ovarium and one tube. A double uterus is described by D'Acrel, in a treatise printed at Stockholm, in 1762; and in the seventh volume of Haller's Elementa Physiologiæ various authors are referred to who deserve to be consulted on this subject. In some of these we find examples of two wombs, or one womb divided into two cornua, viz.: Mad. la Marche's Instructions to Midwives; Boehmer's Fasciculus Secundus; the History of the Academy of Science for the years 1705, 1747, and 1752; T. Bauchine; Sylvius; and Julius Obsequens, as quoted by Riólan, though the observation is supposed by many to refer only to the external parts of generation; the Commercium Litterarium Noricum, anni 1733; Levret and Valisnerius, which last describes a case where one of the wombs opened into the rectum. Sometimes the uterus retains its proper external appearance, although it be really double, its cavity being divided by a septum. Of this instances occur in the History of the Academy of Science for the years 1705, 1708, and 1752; in the Ephem. Nat. Curios. Dec. 2, ann. 5; in the Acta Moguntina, T. ii.; in Levert, p. 32; in Heuerman; and in Eisenman, of which last a plate is given by Gravel, in his Treatise on Superfœtation.

Since, therefore, it appears that in the structure of the parts of generation nature frequently deviates from the ordinary course, practitioners in midwifery ought to consider how many difficulties they may perhaps be exposed to by not attending to the possibility of sometimes meeting with a womb formed like that I have attempted to describe. An attention of this kind would probably have been of the utmost consequence in the present case, for the orifice of the unimpregnated uterus was so far dilated as easily to admit two or three fingers, which must have arisen from the efforts of the midwife to bring on delivery; and the septum was likewise lacerated in two places, I presume by the like unavailing attempts.

Thus, Gentlemen, I have endeavoured to give a faint illustration of the annexed drawings, whose merit sufficiently declares them to be the performance of our worthy and ingenious member, Doctor Macbride, to whom I with pleasure acknowledge myself indebted upon this and many other occasions(*a*).

On the Use of Ergot of Rye in Mydriasis. By J. F. M'Evers, M. D., Cork.

Cork, October 17, 1848.

In the London Medical Gazette of September 8, a correspondent notices the peculiar action of ergot of rye upon the iris, discovered by Mons. Comperat; he says that in excessive dilatation from the use of belladonna, powdered ergot of rye, taken like snuff, has the property of contracting the pupil. I tried its effects on several persons, whose irides were strongly under the influence of belladonna, and in no case did the ergot cause any change when employed on the same day with the belladonna, but in every case, on the subsequent morning, whilst the pupils were still largely dilated, the ergot had a marked effect in the course of a few minutes. Thinking, with M. Comperat, that our knowledge of this property of the ergot may be taken advantage of when the pupil is preternaturally dilated from other causes, I was happily enabled to test its efficacy in the following case of mydriasis.

Barnaby Kelly, aged 50, a pensioner, of tall and slender make, had spent the greater part of his life in tropical climates, but returned home with a good constitution. On getting out of bed three weeks ago, he observed excessive lachrymation of the right eye, which has continued since, together with impaired vision. The eye is free from vascularity or pain of any kind, looks healthy in all its parts, except the iris, which presents the appearance of a narrow ring, so largely is the pupil dilated; the iris is perfectly immoveable.

A few pinches of ergot contracted the pupil considerably in a few minutes, whilst a few additional pinches, taken on the following morning, reduced the pupil to its normal standard, the iris assuming the lively motions of healthy action; thus, in a day, completing, as far as the pupil is concerned, the cure of a disease which Demours, and other writers on ophthalmic surgery, tell us cannot be accomplished by a six months' treatment.

This action of ergot of rye on the iris is worth the careful consideration of physiologists, and, I have no doubt, will lead to important results.

(*a*) The drawings are not to be found among the Memoirs from which this case is quoted.

MEMOIR OF THE LATE WILLIAM GRIFFIN, M.D., OF LIMERICK(*a*).

The icy hand of death has of late been pressing so heavily on the members of our profession,—its approaches have been so rapid and follow in such quick succession,—so many firesides have been chilled and deserted by its awful visitations,—and such an amount of misery has followed in its train,—as to sicken the heart and render it truly sorrowful. When we recount the noble spirits and the master minds which departed from amongst us, sinking beneath a pestilential scourge, and call to memory a cherished friend, or some fond companion of our early days, our spirits droop within us, and we become filled with gloomy forebodings. The serious injury which the profession has sustained in the loss of so many useful and valuable members, and the dismal tales of woe, which of late days have accumulated upon our attention, had in a measure blunted our acuter feelings, disposing us to give way to a species of fatalism, and to almost persuade ourselves, were we not able to account for it by other causes, that as a body we are doomed to destruction.

But when the announcement of Dr. William Griffin's death fell upon our ears, however apathetic or resigned we might have been disposed to feel,—whatever amount of philosophy we might have summoned to our aid,—we could not avoid being acutely sensible to so heavy a shock.

The name of Griffin carries so many bright associations with it, awakens in the mind so much purity of thought and lofty sentiment, as to claim and call forth our warmest acknowledgment. Who that is familiar with the national works of Gerald Griffin, that has not been carried away in profound admiration of his exquisite genius. The author of the Collegians may be imitated but never can be outrivalled in originality of thought, beauty of conception, powers of description, and faithful imagery. His chaste and eloquent delineations of life and character, so true to nature, and so replete with moral impulse, charming while they instruct, and instructing while they charm,—deservedly gained for him the unqualified approval of the literary world, and raised up a monument to his fame and his memory both lasting and imperishable.

To the family of Griffin has been conceded the reputation of being highly talented, and that talent, as nature would have ordained it, appeared traceable to the mother's side. William, the subject of this memoir, was the second of five brothers. He was born in the city of Limerick, on the 25th of October, 1794; his father held the position of a respectable country gentleman, one of that class who constitute the worth and respectability of the country

(*a*) We are indebted to a medical friend in Dublin, the early companion and fellow-student of the late Dr. Griffin, for this memoir.

in the absence of the lord of the soil, who, unfortunately, in too many instances, is never heard of, save through his agent, when the rent-day arrives, or the term of the lease is on the eve of expiring. Some of his forefathers, however, had held in fee large territorial possessions, of which they had been deprived by the operation of laws, the policy, or injustice of which it is not our province to touch upon. His mother was sister to the late Dr. Geary of Limerick, a man of considerable eminence in his profession, and more particularly distinguished for his skill and great success in the treatment of fever.

He acquired a good classical education, first at the school of Mr. T. O'Brien, and afterwards at that of Mr. Richard M'Eligott, a man of much learning, and a teacher of distinction. While at school he was remarkable for capacity and quickness of comprehension. He was also very industrious, and made rapid progress in his studies. Before his education was well completed he was sent to sea as a midshipman, a mode of life at that period somewhat palatable to his taste. His prepossessing appearance, gaiety, and gentlemanly, unassuming manner, rendered him a favourite with all. Through the influence of Sir Vere Hunt, Bart., in the beginning of July, 1809, he entered as a midshipman on board the Venerable, seventy-four, the Flag Ship of the expedition to Flushing in that year, and then under the command of Sir Home Popham and Captain King. She carried out Lord Chatham and his staff, and was soon brought into action in an attack on the batteries, which William describes in a letter home, as a "very new and startling affair," but which was successful in its object without much bloodshed. The Venerable having returned to England was soon despatched for Walcheren again, and on her passage there was wrecked at midnight on the Drogan Sand, off Flushing; her masts had to be cut away, and her cannon and stores were thrown overboard. She was barely kept afloat by constant pumping until morning, when she was towed into dock by her cutters.

Being repaired at Flushing she was towed to England by the Blake, seventy-four, and young Griffin arrived in Chatham, quite tired of the sea, and sick of a seafaring life. At this early period we have to notice the beamings of those high mental qualities which were in after-life developed, in the composition of a poem, giving a full and glowing description of the shipwreck, the perils they had to encounter, and their eventual deliverance.

Having, after some consideration, determined to discontinue a seafaring life, he obtained leave of absence the following year, and shortly after had his name taken off the books of the Admiralty.

He now fixed his choice on the medical profession, but difficulties then stood in the way of his being able to fully accomplish his views, in consequence of unsuccessful speculations in which his father had been involved. Being thrown in a measure on his own resources, his natural energy and engaging address so far favoured him as to succeed in getting himself apprenticed to Mr. Wigram, a respectable general practitioner in Holborn. In this year (1810) he became

familiar with the composition of medicine, and attended the surgical practice of St. Bartholomew's Hospital under Earle, Harvey, and Abernethy. His zeal and energy soon attracted the notice of this last celebrated surgeon, who, by way of appreciation, gave him, under his hand, an unlimited admission to attend his lectures. His attendance on these lectures, and on St. Bartholomew's Hospital, continued until 1814, when he formed a connexion with a surgeon of East Grimstead as his visiting assistant, with whom he remained for a period of two years.

In 1816 he visited Brussels for the purpose of recruiting his health, which suffered from too close application to study; and in the latter part of that year, in consequence of continued delicacy, he was obliged to defer the completion of his education, and return to his friends in Ireland, after an absence of eight years. It will be remembered that this was the year in which typhus fever commenced to make such terrible ravages, among the poor especially, in the south of Ireland. The neighbourhood in which he resided soon afforded a wide field for observation, which he eagerly took advantage of, and published his views in the form of a pamphlet, which, at the time, excited some share of attention; and in reference to which he writes in an old pocket-book: "Published a little pamphlet on the epidemic fever then ravaging Ireland. Began to get a little practice without much seeking for it." His name, however, as "a skilful doctor," was spread about, and he established for himself such a reputation, that he was appointed medical attendant to the Currah Dispensary.

In the following year he fixed his residence at Adare, within eight miles of Limerick, and was appointed medical attendant to the Clarina Dispensary. In the latter part of the year 1822 he removed to Rathkeale, opened a small hospital at his own expense for the sick poor, and acquired a tolerable share of practice for the short time he remained there. These various engagements, which the nature of his circumstances made it impossible for him to decline, prevented him from fulfilling his long-cherished desire of completing his medical studies, and obtaining his diploma. His position in this respect subjected him to occasional slights, which were the more annoying to his sensitive mind, as coming from persons far his inferiors, both in education and abilities. There was no remedy, however, but to submit to them until his aim was finally accomplished. In the year 1823, on the death of his friend and relative, Dr. Enright, he was appointed physician to the Pallaskenry Dispensary, in consequence of which he resigned that of Clarina, but was permitted to retain that of Currah as it was in his immediate neighbourhood.

It was here in Pallaskenry that he made an extensive collection of facts and laid the foundation of those views, which he afterwards gave to the medical world in his celebrated work on Spinal Irritation. He now enjoyed an extent of practice equal to what our best country districts afforded, and hoped, as each new year arose, to be able to absent himself from his duties, in order to graduate in one of the

colleges. An event, however, supervened, which threw this anxious and earnest object of his mind's attention quite out of consideration for the present, and even seemed to have put it beyond his reach for ever. During the last few months of 1823 he began to suffer from a painful affection of his knee and hip, which exhibited in its course and progress all the features of hip disease. He became alarmed, and came to Dublin for advice, where he consulted the late Mr. Colles, who felt a deep interest in his case, and, after several patient examinations gave a decided opinion as to the positive existence of that affection. He recommended him to return home and put in requisition the usual remedies, such as perfect rest, counter-irritation, &c., &c.

This sad announcement, coming as it did from an authority upon which he placed so much reliance, had a most depressing effect on his spirits. On his arrival home he appeared quite overcome with anxiety and cares. The mere idea of giving up his practice, at once and entirely, never, perhaps, to resume it again, was more than the strongest mind could bear up against. One circumstance, however, remained, which afforded some consolation, and prevented the blow, heavy as it was, from being altogether so disastrous to him. In the course of his past career be had been able to save out of his income as much as was necessary to complete the medical education of his brother, the present Dr. Daniel Griffin of Limerick, who now lived with him, having already passed through his studies. A short time before, the governors of the dispensary, with feelings of the kindest sympathy for his situation, and the most earnest anxiety to contribute towards his comfort, appointed Daniel as his *locum tenens*, an arrangement which prevented the institution with which he was connected, together with the practice which he enjoyed, from passing into the hands of strangers.

After a little while his spirits brightened up somewhat, and those traits of natural energy and liveliness of character, which afterwards became so evident, would seem to be manifesting themselves. Severe though the trial was, a state of inaction with him was a perfect impossibility. Having nothing wherewith to employ himself, he turned his attention to light literature. The success and rising fame of his brother Gerald had, in all probability, turned his thoughts in this direction. While on the bed of sickness, and in the height of his sufferings, he took up his pen and commenced writing plays; and it was curious to remark that, as in the case of Cowper, who wrote "John Gilpin" in the midst of the gloomiest apprehensions, most of the productions were of a comic nature. He tried to have one of them introduced on the London stage; it was pronounced by competent judges to be possessed of considerable merit, and far above mediocrity, but merely wanting in that subordinate quality which is understood by the term "stage effect." An idea of his powers in this respect may be conceived by reference to some pieces in prose, of his composition, which were published with collections of tales by his brother Gerald; one called "The Persecu-

tion of Jack Edy," in the volume entitled "Hollandtide;" and another under the name of "The Mistake," in the "Tales of a Jury-Room."

The nature of these pieces is not by any means such as would indicate that they had been composed on a sick bed, which, however, was really the fact; and, strange as it may appear, there was hardly a performance of his of any note through life that was not accomplished either in the midst of the most harassing duty or the severest suffering. Fortunately the illness under which he was labouring did not turn out so serious as was anticipated. After a confinement of some months the second hip became affected in the same manner as the first, and both upper extremities participated in the attack. It may be imagined that this event would cast a fresh damper over his spirits, but quite the contrary occurred. The thought immediately flashed across his mind, that the assemblage of symptoms now presenting were but a diffusion of the original attack, and at last clearly revealed its true character. All anxiety and apprehension in regard to organic affection of the hip vanished from his mind, and his views on the nature of his disease were now quite altered. He summoned up an amount of mental energy really astonishing, and lost not a moment in adopting that course of treatment which the features of his case, from its present complexion and the result of past experience, could safely and with success be capable of suggesting. As the first essential and most important step, he removed to the sea side. The effect of the change was no less sudden than surprising. His strength and spirits rapidly rallied, so that in the short space of little more than two months he seemed like one who, from a nerveless and exhausted condition of body, had virtually jumped into a state of perfect health. A state of delicacy which he had long complained of, and which had at times offered serious impediments to his various undertakings through life was, in all probability, of the same nature, and taking its rise from the same cause as the present, though in its combinations, and the several forms it assumed, the idea of an organic disease frequently took possession of his feelings. When he first returned from London in the year 1816 he was seized with pain in the left side, accompanied with cough and slight expectoration. It was feared that phthisis had actually set in, but the symptoms passed off in the course of the year. After this he suffered occasionally from pains in the left side of his head and neck, and upon one occasion got a severe attack of tic doloreux in the eye-brow of the same side. He was accustomed to say he was exactly like two men put together, one of a sound and healthy constitution, and the other always ailing.

During the stages of his weary illness he never lost sight of his profession, feeling a deep and lively interest in its respectability and welfare. He had himself supplied with periodicals, and the best modern works, both on medicine and surgery; a new or important medical fact was as welcome to his ears, and seemed quite as rich a treat to him in his then situation, as in the best days of his untiring

exertions. In this way he was enabled to fan the lambent flame of research, and to keep pace with the improvements of the day. The idea of perfectly and safely escaping so trying an ordeal seemed to have inspired him with new hope, and convinced him of his great recuperative powers. In fact he felt as if suddenly and altogether endowed with new life and energy; and after taking a review of his position and the prospects before him, he came to the fixed resolution of attaining his qualification, irrespective of any obstacle that might seem to interfere with such an undertaking; and in fulfilment of this purpose he started for Edinburgh previous to the commencement of the winter session of 1825.

While there he associated himself with a few fellow-students, who, from mere acquaintances, became warm and united friends. A strong feeling of mutual attachment grew up between them, and they formed an independent group in themselves. They mixed together, studied together, and moved abroad as one body in their daily little walks during the interval of lectures, and those more expanded excursions which were occasionally undertaken by them. The leisure time thus appropriated is not to be conceived as representing hours of idle recreation. It was rather an intellectual pastime in which each gave his contribution or played some part. Griffin, the bright luminary and centre of attraction, as if too careful of himself, or perhaps being sensitive to the northern blast, generally mounted a thick drab outside coat, proof against wind and weather. It was furnished with a pair of immense pockets, all but ready to burst with voluminous notes of lectures, and other curiosities of literature. Upon one occasion, as he appeared slow in coming forth, he was rather abruptly interrogated how it came to pass that he, who had so much wisdom and knowledge within his head, could be able to carry such a weight of learned lumber about him. Without a single word in reply he unloaded himself of the Dublin Weekly Register, and read aloud one of Sheil's brilliant speeches. It was a question which he admired most,—the eloquence of the orator, or the glowing aspiration for freedom he so vehemently proclaimed; but a manly and open declaration soon set the matter at rest, by his professing his unqualified adoption of the maxim,

"Pro rege sæpe, pro patria semper."

On the subject of phrenology he was interesting without being original. He believed that there was more than "something" in its doctrines; but found fault with the nomenclature and the bumpal subdivisions. He also believed that the objections against it, in regard to its tending towards materialism, were not of much importance, for (he observed) "granting that the intellectual faculties, or thinking principles, did solely depend on the special organization of the brain, still the impress of the hand divine must ever be acknowledged; and further, the mere endowing of matter with such wonderful attributes, would be a no less display of infinite wisdom. He was in the habit of exhibiting a peculiar taste for metaphisical disquisi-

tions, and spoke in admiration of Locke, though he considered the works of Reid and Dugald Stewart as improvements, particularly in reference to the conceptions of matter, which Locke represented in too unreal a form.

He had a passion for poetry, was an ardent admirer of Moore, and repeated the national melodies with soul-stirring emotion, at times indulging in a vein of sentimental effusion of rather a gloomy and languishing character. He also showed himself familiar with the writings of the most eminent of the British poets. But these allusions may be alien to our present purpose, so we shall advance in the usual footpaths.

In his attendance upon lectures he was regular and constant, though he conceived that in some degree they were a loss of time to him. He had always his note-book at hand, not in order to take down the words of the lecturer, but rather to select those leading facts and important truths which form the basis of skilful practice.

In hospital attendance he was most assiduous. Any case in the least interesting immediately caught his eye, and when it formed the subject of a clinical lecture he was fully informed of all its bearings. And if it should appear to him that any doubt or difficulty had not been sufficiently explained away, he did not fail to express his views or objections, whichever they were, to the lecturer. The late Professor Graham entertained a very high opinion of his capabilities, and paid in open class a very flattering compliment to his exquisite tact in diagnosis. The instance is worth recording. A woman was brought into the Royal Infirmary, with apparent symptoms of acute peritonitis, and was ordered by Dr. Graham to have leeches applied to the abdomen. Griffin pointed attention to the morbid sensibility of the skin, the inconsistent condition of the pulse, and the expression of caprice in the countenance, as suspicious of a simulating disease. Graham smilingly replied by assuring him that it was "all very fine in books, but when coming to practice matters will seem differently." A second bleeding was ordered, but before it was put in practice the patient was seized with a fit of hysteria, which at once revealed the true nature of the attack, and testified most triumphantly to the skill and abilities of the student.

The winter having passed and the lectures reaching their close, the day of trial became nigh at hand, that day whereon the twilight beamings of hope and fear doubtfully agitate the student's mind. Griffin was the first candidate to break the ice, and, as a matter of course, had no difficulty in surmounting the "primum periculum," for the medical degree. Almost contemporaneously he presented himself at the College of Surgeons, and obtained his diploma. All the heavy task being now essentially overcome, and an interval of three months having to elapse before the solemn ceremony of exhibiting in the cap of Hippocrates, brief as the period was, his native genius and enterprising spirit would allow of no rest, and, to the surprise of many, he is shortly after announced in the Edinburgh Medical and Surgical Journal as the author of an

"Essay on the Nature of Pain," a most ingenious production, ably written, and abounding with interesting anecdotes, the basis of which had formed the subject of his inaugural dissertation.

When on the eve of leaving Edinburgh he entertained the notion of fixing his residence in London, as opening a boundless range for his varied and active acquirements. It even at one time amounted to a fixed resolution, in which he was strengthened by the advice and generous counsels of Drs. Graham and Duncan, who could distinguish in him the materials for "a physician in a great city." He subsequently abandoned this project, and returned to his native soil, the sphere of his usefulness and good deeds, thrice welcome, with honours on his head, and a prospect before him bright and promising from former remembrances. Limerick was now his chief aim, as it had been his early resting-place. It would not be prudent to prematurely leave the village of Pallaskenry, but, as a preliminary, he fitted up a house in a central part of the city as an infirmary for diseases of the eye, and those incidental to women and children. The poor, whom he attended gratuitously, flocked to him in great numbers, and the institution was soon identified with his fame, and was the means of giving him a step in the ladder of promotion.

In 1830 he finally settled in Limerick, having in this year married the niéce of Sir Vere Hunt, Bart., a very early acquaintance whom he had met in his boyhood days, while residing at Sir Vere's house in London, previous to his going to sea. As the fruit of that marriage he has left one son, fifteen years of age, who has already given signs of much promise. From this period his rise was steady and progressive; his income, rapidly increasing after the first few years, soon reached that amount which entitled him to the rank of a head physician.

The lamented death of the distinguished novelist, in 1840, was a source of long and enduring sorrow to his over sensitive feelings. As an instance of the love and devoted attachment which reigned in this united family, we here annex, from the Life of Gerald, published by the present Dr. Daniel Griffin of Limerick, a portion of the Dedication, to the subject of the present memoir: "whose affectionate care," he says, "fostered that talent in his youngest brother, from which the public has derived such solid pleasure," and "in memory of the deep and unchanging affection that brother always bore him."

As a practitioner Dr. Griffin was unbounded in his resources, yet withal extremely cautious, and trusted much to the powers of nature. He was sanguine to a degree, never despairing while a shadow of hope remained. He felt an intense interest in his patients, and in his anxiety to have the necessary measures faithfully carried out, he became at once the nursetender and the physician. He was connected with several of the medical institutions of his native city, and contributed largely towards their improvement and efficiency; he delivered some very interesting lectures in the board-room of the county infirmary, which were well attended by amateurs and pupils;

he also endeavoured to establish a school of medicine and surgery, but failed in the attempt, for want of active co-operation on the part of others.

In medical politics he was a reformer; and in his evidence before the Committee of the House of Commons on the Medical Charities he offered many able and valuable suggestions for their better regulation. He was a member of the Corporation of Limerick, and had within reach the highest honours that body could confer. When the question of nationality was debated he was at his post, and manfully avowed his sentiments; but he never obtruded his opinions in private, neither was he dissuaded from avowing them, when necessary, from a feeling of sickly timidity. He felt for the wrongs of his country, and sighed for her regeneration.

He was a patron of the fine arts and general literature; and he stood deservedly high in the good opinion of his profession. In the relations of social life he was bland and amiable; and he had the singularly good fortune of attaching to himself a large circle of acquaintances; his private worth and genuine philanthropy were alike proverbial; he was the esteemed of many and the favourite of all; in unpretending charity he was profuse, and in self-denying virtue unequalled; as a friend he was sincere and upright; as a man of feeling he was kind and really generous; and as a Christian he was religious without ostentation. No man could review the past with a more sterling sense of conscious rectitude, and no man could look to the future with brighter hopes of eternal reward.

In him were centred those rare intellectual excellencies which constitute the all-important attributes of a "medical mind." To the faculty of comparing and generalizing facts in the spirit of true philosophy, he had superadded the habits of close and faithful observation. The several original contributions he has made to the medical literature of his country deservedly give him place among its eminent medical men.

His brilliant career was cut short in consequence of his enthusiastic devotion to the best interests of the profession. As the result of untiring mental energy, coupled with great and overpowering bodily labours, his nervous system became quite unhinged, and in the beginning of April last he began to be affected with pain in the left side of the head. As this was no uncommon thing with him, he treated it as rheumatism, with leeches, blisters, colchicum, turpentine, &c., all the while going about and attending to business. He usually got relief on the application of remedies, and then after a week or so fell back again. After four or five weeks he consented, under the persuasion of his friends, to give up business and go to the country. He now noticed a difficulty in recollecting particular words, which embarrassed his mind in speaking or writing to patients; and his letters, though otherwise correct and to the purpose, contained several erasures or, at times, the substitution of one word for another. He used to say: "It is a most curious thing: I know as well as possible what I am

going to say, but, if I were shot for it, I cannot think of the particular word." The worst sign about him was complete absence of any sense of danger. It was now obvious that he laboured under a chronic inflammation of the brain, which, notwithstanding every possible effort that could be devised, pursued the usual melancholy course; paralysis of the right side quickly supervened, complicated with a total interruption of conversational powers; a general debility and complete languor ensued; and he continued in the same distressing and hopeless state till the termination of his earthly sufferings, which took place on the 9th of July of the present year.

We regret that the length to which this memoir has extended prevents us from alluding in a particular manner to Dr. Griffin's able writings. The following is a list of his professional publications, and the papers published by him in the different medical periodicals:

1. A Treatise on Fever. 8vo. pamphlet. 1818.

2. An Essay on the Nature of Pain, with some Considerations on its principal Varieties as connected with Disease, and Remarks on the Treatment: being the Subject of an Inaugural Dissertation delivered at the University of Edinburgh. 8vo. pp. 86. Edinburgh, Moir. 1826.

3. Observations on Functional Affections of the Spinal Cord and Ganglionic System of Nerves, in which their Identity with Sympathetic, Nervous, and Imitative Diseases is Illustrated. By William Griffin, M. D., &c., and Daniel Griffin, M. D. London, Burgess and Hill. 1834. 8vo. pp. 247.

4. Observations on the Cholera, as it appeared in Limerick in 1831-2. 1834.

5. Medical and Physiological Problems, being chiefly Researches for correct Principles of Treatment in disputed Points of Medical Practice. By William Griffin, M. D., and Daniel Griffin, M. D. London, Sherwood and Co. 1843. 8vo. pp. 356.

Dr. Griffin wrote some papers in the Medical and Physical Journal, and was a constant contributor to the Dublin Medical Journal, both in its original and in its present form. The Medical and Physiological Problems, which he afterwards published in connexion with his brother, first appeared, together with other papers, in detached essays scattered over seven volumes of our former series; and the last of his labours (a paper on abortion) appeared in the Number for May, 1847. We understand he was preparing a work on cholera at the time of his death, which is now nearly ready for publication.

EPITAPH UPON BOYLE GODFREY, ALCHYMIST, &c.

In the Number for May, 1846, we gave an eulogium extracted from the Minute Book of the Dublin Medico-Philosophical Society, upon Isaac Butler, the celebrated Dublin astrologer, caster of nativities, and almanac maker,—the pupil of Dr. John Whaley, and withal beadle to the Worshipful Company of the Apothecaries,—who died in 1755. In the same curious old manuscript work we find the following epitaph upon the celebrated alchymist, Boyle Godfrey. It was written by the learned and facetious Dr. Charles Smith, author of the Histories of the Counties of Cork and Waterford. It was read at a meeting of the Society upon the 1st of July, 1756, and is inserted in the Minutes of the 15th of that month(*a*).

EPITAPHIUM CHEMICUM.

Here lieth *to digest, macerate*, and *amalgamate* with clay,
In *Balneo Arenæ*,
Stratum super stratum,
The *Residuum*, *Terra Damnata*, and *Caput Mortuum*,
Of BOYLE GODFREY, CHIMIST,
And M. D.
A man who in this earthly *Laboratory*
Pursued various processes to obtain
Arcanum Vitæ,
Or the Secret to Live:
Also *Aurum Vitæ*,
Or the Art of getting, rather than making, Gold.
Alchemist like,
All his labour and *propition*,
As Mercury in the fire, *evaporated in fumo*.
When he *dissolved* to his first principles,
He *departed* as poor
As the last drops of an *alembic*:
For riches are not poured
On the *Adepts* of this world.
Thus,
Not *Solar* in his purse,
Neither *Lunar* in his disposition,
Nor *Jovial* in his *temperament*;
Being of *Saturnine* habit,
Venereal conflicts had left him,
And *Martial* ones he disliked.
With nothing *saline* in his *composition*
All *Salts* but two were his *Nostrums*.
The *Attic* he did not know
And that of the Earth he thought not *Essential*;
But, perhaps, his had lost its *Savour*.

(*a*) Boyle Godfrey published "A New Method of Extinguishing Fires," London, 1727, 8vo.; and a sort of receipt-book entitled, "Miscellaneous Experiments and Observations on various Subjects," London, 1737, 8vo. Of this latter there was a Dublin reprint.

Though fond of news, he carefully avoided
The *fermentation, effervescence,*
And *decupilation* of this life.
Full seventy years his *exalted essence*
Was *hermetically sealed* in its *terrene matrass;*
But the *radical moisture* being exhausted,
The *Elixir Vitæ* spent,
Inspissated and *exsiccated* to a cuticle,
He could not *suspend* longer in his *vehicle,*
But *precipitated gradatim*
Per companam,
To his original dust.
May that light, brighter than *Bolognian Phosphorus,*
Preserve him from the *Incineration* and *Concremation*
Of the *Athanor, Empyreuma,* and *Reverberatory*
Furnace of the other world,
Depurate him, like *Tartarus Regeneratus,*
From the *Fæces* and *Scoria* of this;
Highly *rectify* and *volatilize*
His *Etherial Spirit,*
Bring it over the *helm* of the *Retort of this Globe,*
Place in a proper *Recipient,*
Or *Crystalline Orb,*
Among the elect of the *Flowers of Benjamin,*
Never to be *saturated*
Till the general *Resuscitation,*
Deflagration, and *Calcination* of all things,
When all the *reguline* parts
Of his *comminuted substance*
Shall be again *concentrated,*
Revivified, alcholized,
And imbibe its *pristine Archeses;*
Undergo a new *transmutation,*
Eternal *fixation,*
And *combination* of its former *aura;*
Be *coated* over and decorated in robes more fair
Than the *magistie* of *Bismuth,*
More sparkling than *Cinnabar,*
Or *Aurum Mosaicum.*
And being found *Proof Spirit,*
Then to be exalted and *sublimed* together
Into the *Concave Dome*
Of the highest *Aludel* in Paradise.

SILVESTER O'HALLORAN.

In our memoir of this distinguished surgeon we omitted to mention in the bibliography, the following tract:

"A concise and impartial Account of the Advantages arising to the Public from the general Use of a new Method of Amputation." Dublin, S. Powell. 1763. 8vo. pp. 15. It was dedicated to Ezekiel Nesbit and the College of Physicians, and to John Nichols and the College of Surgeons.

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